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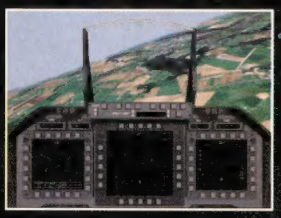

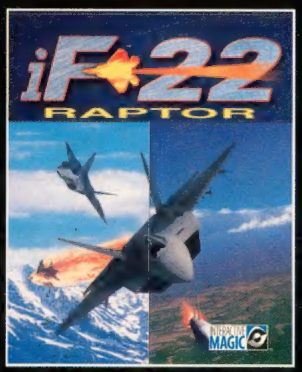

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PC GAMER

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Just how clever are we?

THE LAST FIVE MONTHS HAVE seen a dichotomy of game marks. On, I'd say, about one and a half fingers we have seen what have been quality games. On the other eight and a half we have had average to poor. This depresses me.

This month, the retail industry is complaining more than ever about terrible PC software sell-through to consumers. The software industry itself is making no secret it's lamenting the below-forecast sales. More importantly, however, consumers are angry because there are, basically, not enough good games to buy to warrant spending 15 hundred quid on a PC. But we're quite right in being angry. From the games that have been released this year, I'd recommend (to players who are not fanatical about a particular genre) six games: *NASCAR 2, Flying Corps, MDK, ST: Generations, X-Wing vs TIE Fighter* and *Dungeon Keeper.* Six games since Christmas that are *really* worth playing from an industry that is worth billions of dollars. Pretty disgraceful really.

So why?

Look at *Dungeon Keeper.* If one of the world's most experienced developers needs over three years to get a game right, then how can other teams be expected to adhere to a rigid "you get it done in 18 months or else" timetable. Molyneux is the man behind *Populous* (4 million units and one of the Eighties' defining achievements), *Magic Carpet* (1 million-plus and the PC game that finally visually usurped the consoles) and *Theme Park* (over 2 million to date and proof that the PC is *needed* by other platforms). If he can't get it right on time, then who can?

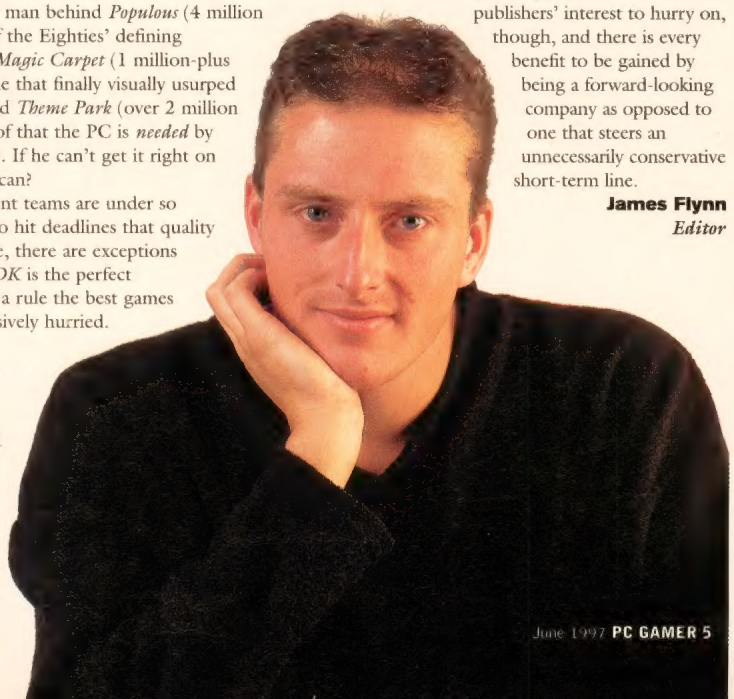
Development teams are under so much pressure to hit deadlines that quality is suffering. Sure, there are exceptions (and Shiny's *MDK* is the perfect example) but as a rule the best games cannot be excessively hurried. The solutions? Software houses either give programmers more slack (read trust) or put up with the fact that they'll just exist on average games and probably go nowhere fast.

The tragedy of this cost-cutting rush is that one of the industry's dreams is largely being ignored. Developing Artificial Intelligence – that is, the invisible routines that play every opponent – costs a vast amount of money. More pressing concerns ensure that it is being relegated to a desirable companion to the graphics as opposed to an essential bed-mate. This month's feature examines the successes and failings of today's games. AI must rank alongside graphics in importance, and if you look at the games that have scored highly this year, you'll find a real, fair AI challenge – not just glitzy visuals.

And now, briefly, on to a happier subject. Despite PC GAMER's major increase in flight sim coverage since I first sat in Jonathan's wooden chair, I actually rarely fly the Split-Ss. However, *TFX3: F-22* is one I am longing to take to the skies with. DID are unquestionably the Top Guns in their field and their latest offering sounds so special it really ought to appear in early 1999 rather than late 1997. If you're not 'in to' flight sims, I reckon this will be the one to change your mind.

The whole software industry is (yet again) in a state of flux. It has still only been in existence for 15 years and all the business models (TV, video, microwave) point toward a 30-year mass-market acceptance period. It's in publishers' interest to hurry on, though, and there is every benefit to be gained by being a forward-looking company as opposed to one that steers an unnecessarily conservative short-term line.

James Flynn
Editor



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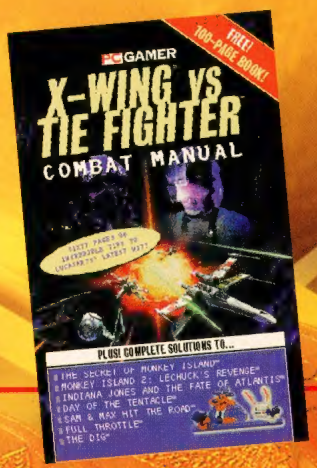
FREE BOOK!
The incredible game – the only tips book you'll never need!



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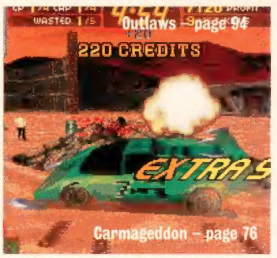

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CD GAMER

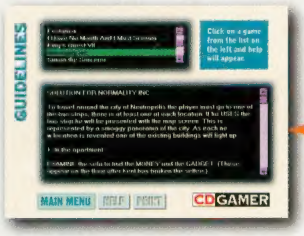
CD GAMER the Windows way

The consoles may be grabbing all the headlines this month, but here is proof that the right PC can do it better. An excellent 3D platform game, the latest challenger to *Links LS*, *GP2* unofficially updated for the 1997 season and a wealth of other goodies.

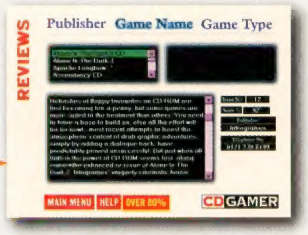
CD GAMER
PLUS... GOMB OF GAME PATCHES AND 3D UPGRADES!
EXCLUSIVE PLAYABLE DEMO
PANDEMONIUM
It is! Incredibly fast platform mania!
EXCLUSIVE
FRONT PAGE SPORTS GOLF
INTERSTATE 76
PLUS!
UNOFFICIAL GRAND PRIX 2
1997 CAR UPDATES
LUCASARTS SPECIAL
Ten classic demos to accompany our LucasArts tips special...
TIE FIGHTER • SAM & MAX • INDIANA JONES AND THE FATE OF ATLANTIS • DAY OF THE TENTACLE • AFTERLIFE • AND MORE...
Issue 44 June 1997
INCLUDES THE UNIQUE PC GAMER DATABASE – OVER 900 REVIEWS AND 70 FULL GAME SOLUTIONS FOR YOUR PLEASURE!

After Run CD GAMER you'll find yourself here, from where you can install and play any of the demos and shareware games, and also access the reviews and tips libraries.

Once you've got CD GAMER running (full instructions are on the back of the case), click on Run CD GAMER to access the main demos, shareware, the reviews database and Netware.



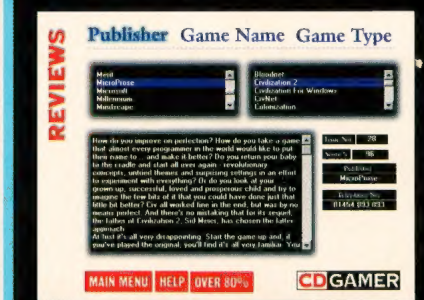
The tips and solutions section contains masses of information to help you out of tricky spots. We'll be adding more stuff each month.



The reviews library has details of every game we've reviewed in PC GAMER, nearly, including scores and some text. We promise to update it completely soon.

The PC GAMER Reviews Database

How would you like to have every single review that's ever been published in PC GAMER at your disposal? Or be able to browse through nearly four years of game solutions that we've published? The PC GAMER database contains both. We've updated it, sorted out a few technical glitches and speeded the entire CD up. And we suggest you take a look at it.



CD GAMER via DOS

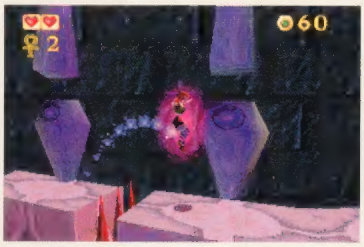
CD GAMER from DOS looks a little rudimentary, but, hey, it's what's inside that counts – right, readers? From here you'll be able to access all this month's patches and WADS along with any DOS-only demos, though not Windows-only demos nor the reviews and tips. Sorry.

Pandemonium

Crystal Dynamics/BMG

P75 (P133 recommended), 16Mb RAM, Windows 95

This smash hit platform game on the PlayStation has now made a successful journey to the PC, and our exclusive playable demo shows you why it's such a popular game on the console. Every feature has been recreated perfectly and it is so addictive that we wager you'll still be playing it when our next issue hits the streets. Although the game looks very 3D, it's quite deceptive. The controls are



standard 2D platform game functions and you simply have to worry about your movement left and right. To kill the many types of creature featured in the demo you must perform a perfectly timed Sonic-style leap to land on their heads/backs, although you do have some control over the main character when in the air. The control options are not immediately obvious, so to get you started, here are the basics:

A	Run left
S	Run right
Space	Jump
X	Crouch

Front Page Sports Golf

Sierra On-Line

Pentium 60 (Pentium 100 recommended), 16Mb RAM, Windows 95

In the UK this game will be launched as *Sierra Sports: Golf*, but to avoid confusion we've stuck to the US name that appears on the demo. This is a massively revamped exclusive playable demo of Sierra's new golfing effort and features three tricky holes from one of the game's courses. Try your hand at par 3, 4 and 5 type holes and sample Sierra's proprietary 'true swing' control system – one that uses a movement of the mouse to belt the ball as opposed to the traditional space bar clicks. Also included is an introductory video, which explains, among other things, the motivation behind this control method change. You can read Steve's review of the full game on page 102.

Interstate 76

Activision

P100 (P133 recommended), 16Mb RAM (32Mb RAM recommended), Windows 95

Relive tacky Seventies' cop shows with this month's playable demo of *Interstate 76*, where the cars are big and the bellbottoms are even bigger. The graphics technology is based on Activision's acclaimed *MechWarrior 2* engine and it fits into a driving game perfectly. Our demo features one of the many missions from the full game, and for your added enjoyment we have listed a few vital controls below (more can be found in the accompanying help file).

Accelerate	Numpad up	Joystick forward
Brake	Numpad down	Joystick back
Steer left/right	Numpad left/right	Joystick left/right
Emergency brake	Z	
Reverse	Tab	
Shift up	. (Period)	
Shift down	, (Comma)	

Fire weapon	Space bar	Joystick button 1
Cycle weapon	Enter	Joystick button 2
Horn	G	
Headlights on/off	H	
View map	M	

GAME DEMOS

Speedster

Psygnosis

Pentium 100, 16Mb RAM, Windows 95

Take a jeep or performance car out for a high-speed chase for one lap of the 'Atlantic Trail' course from this new overhead-scrolling racer from Psygnosis. To install the game simply select it from the game demos list on the Windows menu and restart it from there if you want to play it again. Because of limited space on this month's CD we have had to remove the *Speedster* audio track. You may, therefore, encounter an error message when the game loads – simply click the mouse to clear the message.

FIFA Soccer Manager

Electronic Arts

P60 (Pentium 120 recommended), 16Mb RAM, Windows 95

Experience the latest football management simulation to enter the market with this massive interactive demo from EA Sports. Our demo features almost every aspect of the full game, with only some small options and the actual in-game engine missing. The football sim competition is intense and this is going to be one of the top contenders.

Harvest Of Souls

Sierra On-Line

486DX2/66 (Pentium recommended), 12Mb RAM (16Mb recommended), Windows 3.x/95

The latest adventure game to emerge from Sierra is *Harvest Of Souls*. There is quite a large interactive nugget on display here plus some slides, showing scenes from the full game, and a foot-tapping rock video. To examine objects move your cursor around the screen and click when the centre turns to green. To move around place the cursor at the edges of the screen and click.

Perfect Weapon

ASC Games

Pentium 75, 16Mb RAM, Windows 95

The 'Perfect Weapon' is apparently the main character you control in this playable demo, because he certainly packs a powerful punch and a very nasty kick too. Our demo features one area to explore with plenty of 'bad dudes' to practise your Bruce Lee techniques on.

Ten Pin Alley

ASC Games

Pentium 75, 16Mb RAM, Windows 95

Our second demo from ASC Games this month features a playable slice from their new sports simulation based on that bastion of American life, ten pin bowling. The game is somewhat tongue-in-check, which is quickly discovered when you see the choice of characters you can control. The control system is similar to, but more complex than, the tri-click used in most golfing simulations, but it is fairly easy to pick up.

ZAR

Auric Vision

P75, 8Mb RAM (16Mb recommended), MS-DOS/Windows 95

Last month came *Twigger*, and now we bring you *ZAR*, which plainly shows that the Russian software publishers are slowly catching up with the Western world. *ZAR* is a graphically impressive *MechWarrior*-style shoot-'em-up with some awesome weaponry and a very impressive 3D engine. There are lots of power-ups to be sought in this demo, and you had better find them quickly if you want to stay the distance. Once installation is complete, launch the file GO.BAT, which is located in the \MADDOX\ZAR directory on your C drive.

Before You Start

We strongly recommend that you free up as much expanded memory as possible. You can do this by editing the config.sys file yourself.

Type EDIT\CONFIG.SYS <ENTER> from the C:\ prompt, and a screen will appear. Look for the line which has the words emm386.exe in it. Replace the text which appears after emm386.exe with the word RAM. The line should now look something like this: device = c:\dos\emm386.exe RAM

Alternatively, one easy route to more memory is to use the memmaker program. This should be undergone carefully, especially if you use a boot menu or a joint DOS-Win/Win 95 set-up.

Please note that we have come across compatibility problems with PCs using CD-ROM cache programs other than MSCDEX, which is supplied with MS-DOS. The most up-to-date version is included on CD GAMER.

The DOS Menu

Put the CD into your CD-ROM drive and select it by entering MS-DOS, and typing D:<ENTER> or whichever letter you use for the CD.

Start the menu by typing go<ENTER>. If you are running Win 95, we recommend that you start your PC in Command Prompt Only mode and follow these same steps. If you run the DOS menu from a DOS box, it is not recommended that you run it in a window or ALT-TAB away from it.

The Windows 3.1 Menu

To start the Windows 3.1 menu select Run from the File menu. Enter the letter of your CD-ROM drive then run the file PCG.EXE. A new program icon will appear on your desktop. Double click the PC GAMER icon to launch the menu. This menu includes only the Windows 3.1 games. You need to use the DOS menu to get at all the DOS games.

The Windows 95 Menu

Insert the CD-ROM and a menu will appear, giving you the options of running the menu, exploring the CD-ROM, or returning to Windows. Select the Run menu to see this month's games. This menu includes both the Win95 and Windows 3.1 games. You need to use the DOS menu to get at the DOS games.

Got A Problem?

If your CD is defective, please return it to the address below. Please make sure you have followed our installation procedures correctly to ensure that there is a physical problem. Please send the CD along with a description of the fault plus a self-addressed envelope. Return postage will be paid.

PC GAMER CD Returns
Disctronics
Southwater Business Park
Worthing Road
Southwater
W. Sussex RH13 7YT

A CD should only need replacing if the CD itself cannot be read. If, instead, you are experiencing problems with an individual demo or application, phone our technical support line. This is open between 9.30 am and 6 pm from Monday to Friday.

Tel 01225 442244
Fax 01225 732279
e-mail: support@futurenet.co.uk

Please note that the help-line staff provide assistance with technical problems directly related to our cover CD and cannot provide training on software or hardware in general.

● The PC GAMER CD-ROM/coverdisks have been thoroughly tested at all stages of production and certified 'virus free' by an independent organisation. We recommend that you always run a virus checker on ANY software before running it.

Future Publishing Ltd cannot accept any responsibility for disruption, damage and/or loss to your data or your computer system which may occur while using this CD-ROM/disk, the programs or the data on it. Ensure that you have up-to-date backups of data contained on your hard drives before running any new software.

3D Ultra Mini Golf

Sierra On-Line

486DX2/66, 12Mb RAM (16Mb recommended), Windows 3.x/95

Can be thought of as the baby brother of *Sierra Sports: Golf*. This fun, fully playable demo of their mini golf game features three whole courses from the final product plus some wonderful commentary in the form of some amusing voices and sound effects. We have the Windmill, Lost Mine and Incredible Machine holes to keep you occupied for many hours and this is all held together by a simple but effective control system. Simply move the mouse left or right to rotate the club head and then hold the left mouse button to select the power. This demo works fine on Windows 3.x machines, but you do get increased performance with Win32s and WinG installed – simply select these from the 'Getting Started' section of the CD GAMER menu.

LUCASARTS SPECIAL

To tie in with this month's exclusive covermounted book we bring you a collection of demos from the annals of LucasArts gaming history, along with one of their latest efforts, *Yoda Stories*. If you're new to the PC and haven't sampled the delights of LucasArts' back catalogue, then this should provide you with a gentle introduction. When you have seen enough of a particular demo you can bring up an option screen by pressing F5 or exit the game by pressing CTRL and X together.

Afterlife

Pentium, 16Mb RAM, Windows 95

A very unusual god game simulation where you must take control of heaven and hell.

Dark Forces

486DX2/66, 8Mb RAM, MS-DOS

A *Doom* clone based in the Star Wars universe. It looks a little tired these days, but still quite fun to play and will be the perfect training ground for the forthcoming *Jedi Knight*.

The Dig

486DX2/66, 8Mb RAM, MS-DOS

A huge adventure epic which is able to name-drop Steven Spielberg as a large influence behind its development.

The Fate Of Atlantis

486DX2/66, 8Mb RAM, MS-DOS

Judging by the never-ending requests for help we receive, this must be one of the most popular adventure games of all time.

Indy's Desktop Adventures

486DX2/66, 8Mb RAM, Windows 3.x/95

A simple and fun Windows adventure game with each game being based on an almost infinite set of rules. Therefore, no two games are ever the same.

DirectX Warning!

Some of the playable demos on this month's CD require the installation of DirectX drivers onto your Windows 95 system. These drivers have been designed by Microsoft to increase the speed of games and multimedia applications running under the Windows 95 environment by allowing direct access to the relevant hardware devices inside your PC. However, early versions of DirectX were not compatible with certain graphics cards and caused the default driver for Windows to be overwritten and, in some cases, severe corruption to the display itself, only allowing access to the poor 16 colour screen mode. These problems are quite rare, but because they do exist, PC GAMER has taken the following steps to limit the possibility of this occurring with one of our readers. First, we have placed a copy of DirectX version 3, a far superior product, on the CD GAMER Windows menu itself, which we would strongly recommend using, and, second, we will list some possible solutions here for those of you who still experience difficulties.

The most common problem is a display driver problem, and there are a couple of ways to solve this. You should first enter Windows 95 under safe mode, which is accessed by pressing the F8 key when the computer starts up and displays the message starting Windows 95, and then selecting the relevant option from the menu that appears. Once Windows has loaded, you should right-click on an empty area of desktop and select properties from the menu that appears. When the display properties window is onscreen, select the settings tab, and then click on the change display type button. You will then have the option to choose the relevant adaptor type to suit your particular graphics hardware. If this does not work, it is a good idea to allow Windows 95 to start as normal and then run the added new hardware program within the control panel to re-detect the graphics card you have. It is likely that you may have to remove the currently selected driver from the Device Manager under the System properties Window before this program will find any new devices.

Please note: In very severe cases of a DirectX conflict, these suggestions may not solve the problem and, regrettably, the only solution may be a complete reinstallation of the Windows 95 operating system. Please bear this in mind before attempting to install a DirectX game or the DirectX drivers.

IMPORTANT: The DirectX set-up program will occasionally fail to run correctly when it is launched from within the CD GAMER Windows menu, so if you encounter any error messages, try changing to the UTILS\DIRECTX directory on the disc and manually run the DXSETUP.EXE program. This process will install version 3 of DirectX and should preferably be installed on systems currently using DirectX 2, which can be installed by running the file DXFULL.EXE located in the UTILS\DIRECTX2 directory on CD GAMER. If you do not install DirectX 2 prior to version 3, you may experience difficulties with games that were programmed for the earlier version.

Day Of The Tentacle

486DX2/66, 8Mb RAM, MS-DOS

One of the early masterpieces that made them kings of the adventure genre, featuring cartoon-style graphics and animation.

Sam & Max Hit The Road

486DX2/66, 8Mb RAM, MS-DOS

Brilliant! Classic adventure game featuring those intrepid detectives, Sam the dog and Max the ferocious rabbit.

TIE Fighter

486DX, 8Mb RAM, MS-DOS

A rolling demo of this very popular space shoot-'em-up sequel to the equally popular *X-Wing*.

X-Wing

486DX, 8Mb RAM, MS-DOS

A brief look at the game that spawned *TIE Fighter* and, more recently, the ground-breaking *X-Wing vs TIE Fighter*.

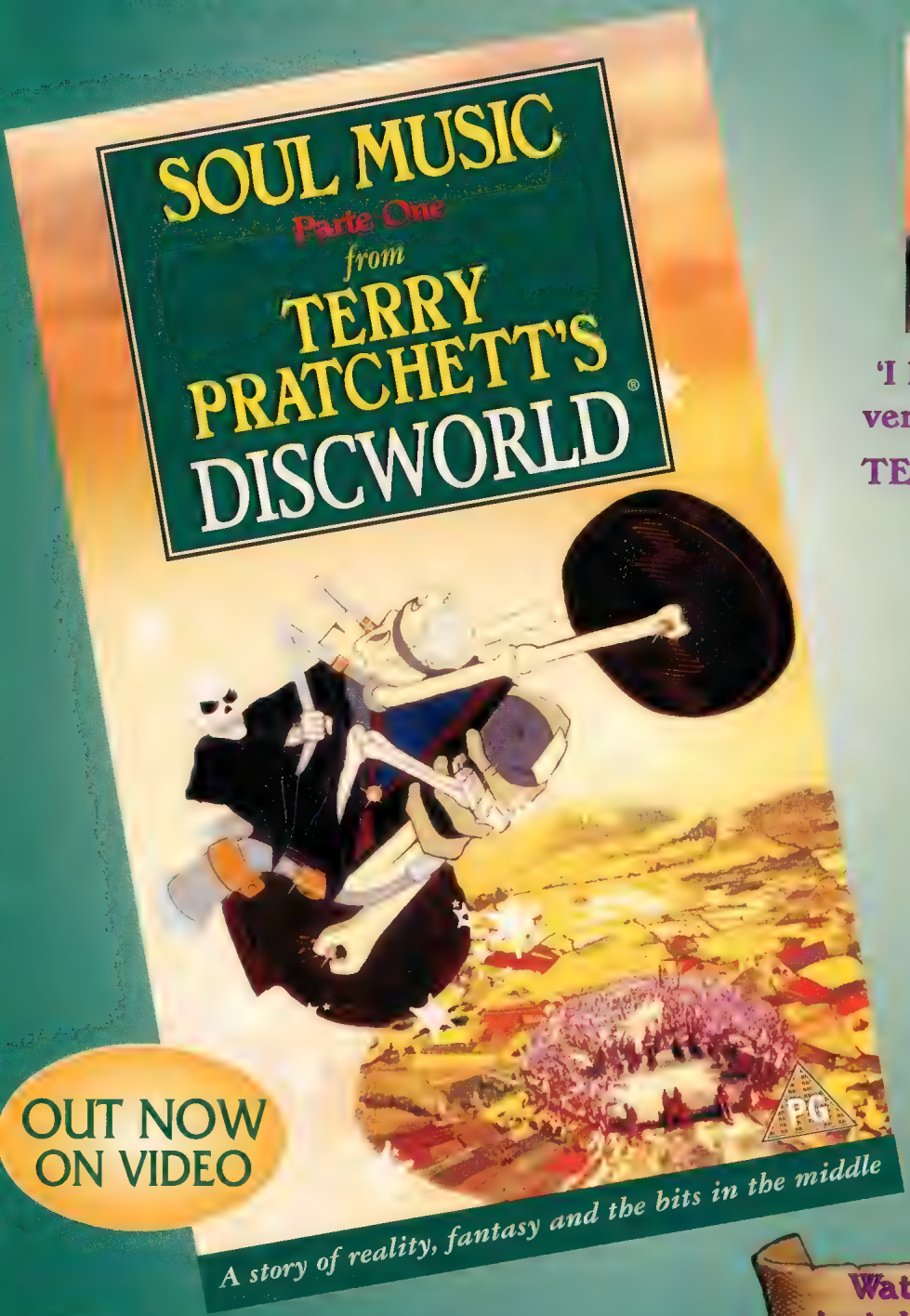
Yoda Stories

Pentium, 16Mb RAM, Windows 95

More Windows desktop antics to be had in this adventure gaming sequel, again based in the Star Wars universe.

The Turtle really moves!

For the first time ever,
Terry Pratchett's Discworld® has been animated!



OUT NOW ON VIDEO

'I love the animated version of Soul Music'
TERRY PRATCHETT

Parte One Features;

An EXCLUSIVE Terry Pratchett interview

A Promotional Discworld trailer

The first four of seven episodes cut seamlessly

The first three of six Collectors Postcards

Watch out for the final instalment - Parte Two out on video 9th June 1997

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See LARA CROFT like you've never seen her before
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CREATIVE

3D Blaster

PCI

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If you play games on the PC, you've never seen anything like the Creative Labs 3D Blaster. This breathtaking graphics accelerator takes 3D game play on PCI systems to a whole new dimension of excitement with imagery so realistic your eyes will be out on stalks.

No more blocky graphics or jerky frames. Instead you can feast your eyes on superb quality, super sharp definition and blinding performance which you can't get with conventional cards.

3D Blaster PCI's compatibility also gives no other card a look in, with extensive games support including Direct3D™, DirectDraw™, CGL and Speedy 3D.

Today there are more than 40 top titles launched that support the 3D Blaster PCI, and four of these hot titles come in the box – Quake™ shareware, Flight Unlimited™, Battle Arena Toshinden™, and Rebel Moon™. Keep your eyes open for more to come.

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www.creativelabs.com
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Computer Buyer Recommended

PC Guide

CREATIVE

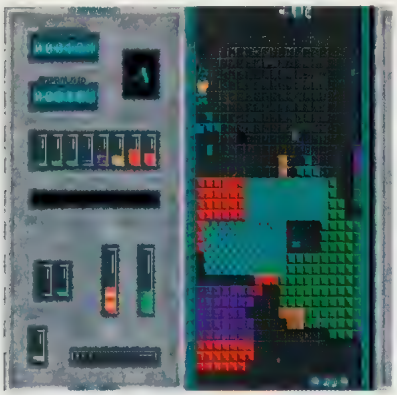
SHAREWARE

Biprolex

K-D Lab

386DX, 4Mb RAM, MS-DOS/Windows 95

You don't often see minimum specs this low and still expect a good game at the end of it, but *Biprolex* is actually a nice little game, and we have the full version for you to enjoy this month! Basically, this is a puzzle game with ideas taken from *Tetris* and *Breakout* with just a touch of eccentric programming thrown in for good measure. Install from the DOS menu and type SETSOUND to configure your hardware followed by BIPLUS to start the game



Quiver

ESD Games

486DX/33, 8Mb RAM, MS-DOS/Windows 95

A fun shareware release of a new first person perspective *Doom* clone, with a whole nine levels of adrenaline-pumping action immediately available on this month's CD. Simply install *Quiver* through the CD GAMER DOS menu to a directory of your choice and then launch the game by typing the command QUIVERS within this directory. In addition, there is a locked version of the full 27-level game on the CD and to access it you simply have to fill out the automated registration form on the CD and send your payment to ESD Games. This can be done electronically by e mail or fax with payment made through a secure credit card system, or you can simply post it to them in the US. Once payment is cleared, they will provide you with an access code which will allow you entry into the rest of the game. To launch the PC GAMER endorsed registration program, simply point Windows Explorer/File Manager at the directory you have installed the game to and then load the program file called UNLOCKQR.EXE

Cyber Cube

Mystic Bytes

486DX2, 8Mb RAM, Windows 95

Cyber Cube is similar to *Tetris* but features a three-dimensional playing area and the added difficulty of having to match colours as well as shapes. A tricky game that certainly gets the grey matter working but one that you'll find yourself coming back to. This is not strictly a shareware release as the programmers are trying to drum up advertising revenue for the final release to be made freely available on the Internet. So if you think you can help them, simply contact them using the info contained in the game.

Vanguard Ace

Imaginative Illusions

486DX, 8Mb RAM, MS-DOS

A very impressive shareware release of this overhead scrolling shoot-'em up with pleasing visual and audio effects. The minimum requirements above are correct, and on anything over a 486DX4/100 you can have some real 60fps speed.

Revenge Of The Mutant Camels

Llamasoft

486DX, 8Mb RAM, MS-DOS

One of Jeff Minter's masterpieces now made available to everyone with the release of this freeware version. It's not easy to explain the concept behind this one, so we'll simply let you find out for yourself.

NETWARE

Due to space restraints, we have a smaller than normal Netware section, but we will be back with a vengeance next month

Grand Prix 2

As the Grand Prix season has now hit Europe with a vengeance we feel it's time to bring you some of the latest developments for *Grand Prix 2* add-ons. All require a full version of *Grand Prix 2* to be installed, and, as always, these are neither official nor supported by MicroProse, so use them at your own risk. They can drastically change the way the game looks and plays. Make sure you always back up your data before installing or making any changes to the game. All are available from the CD GAMER DOS menu and we have for you

1) Car graphics for the 1995, 1996 and 1997 seasons

2) A 3D viewer for displaying your new car designs without loading the game

3) An impressive editing package for making graphical as well as technical changes to the game.

4) Version 2 of Trevor Kellaway's *Grand Prix 2* graphic file converter, which now supports car, helmet, building and advertising board graphics. Be careful when making major design changes to external graphics as you could increase the memory requirements for certain circuits and cause the game to crash. So use this at your peril

The most popular option is bound to be the 1997 season graphics and these have already been converted to JAM format for instant porting into the game. Simply copy the new JAM files into the GAMEJAMS subdirectory in your default *Grand Prix 2* directory. The 1995 and 1996 season graphics are still in BMP format, but we have provided the latest version of Trevor Kellaway's JAM to BMP and BMP to JAM file converter to make this process easy for you. Have a quick read of the documentation supplied with this utility before you start so that you don't make any unrecoverable mistakes.

And finally, remember that MicroProse's official Grand Prix 1997 add-on is scheduled for release later this year. This will obviously contain a higher quality and greater number of add-ons to update the game from the current 1995 settings, and those on CD GAMER should by no means be seen as a replacement.

Profits Warning

Team 17

Pentium, 16Mb RAM, Windows 95, Suitable Internet connection

A demo of Team 17's new on-line stock market simulation based on real share prices. Check out their home page: http://www.team17.com for more information

Microsoft Internet Explorer

Microsoft

Pentium, 16Mb RAM, Windows 3.x/95

Install Microsoft's hugely popular Web browser. Versions for all Windows platforms are included.

PATCHES

This month's enormous patch bonanza features spectacular graphical updates and bug fixes for around 50 games. Some of these include upgrades for 3D graphics cards to give you the ultimate experienced from your recent gaming purchases. Each one can be installed from the DOS menu and should ideally be placed in a temporary directory until you are certain of how the patch operates. Always consult any documentation supplied with the patches and, if in doubt, either don't use them if your version of the game is functioning normally or contact the relative technical support line for each game publisher for further information first.

PCG

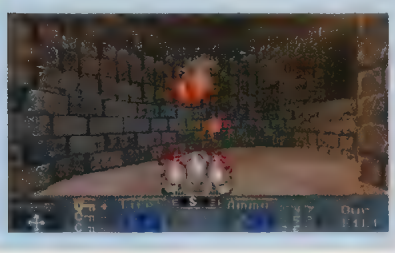
On the floppies

Quiver

ESD Games

486DX/33, 8Mb RAM, MS-DOS/Windows 95

Arguably the best shareware release this year and this great first-person perspective shoot-'em-up is now made available to all PC GAMER readers. Nine levels of astoundingly fast graphics and gameplay await you on this month's floppy disk, and the full 27-level game is a mere phone call or fax away. To install the game, exit to DOS, put the first disk in the drive and type A: followed by return and then GO followed by return. Follow the onscreen instructions and remember to swap the disks when asked to do so and prepare yourself for many sleepless nights.



Revenge Of The Mutant Camels

Llamatron

486DX, 8Mb RAM, MS-DOS

The Jeff Minter classic in all its full registered version glory. To install the game simply exit to MS-DOS, insert the second disk, type A: followed by return and then GO2 followed by return. Change to the PCG\CAMELS directory and type REVENGE to start the game.

Got A Problem?

If, after following the above steps, you're still having trouble, or if the game simply won't install at all, it's just possible that you have a defective disk. If you're convinced that a disk is dodgy, return it to the address below and a new, working version should be returned to you within 28 days.

PC GAMER June Disk, TIB PLC, TIB House, 11 Edward Street, Bradford, BD4 7BH.

SCOOP! Your first look at...

WARHAMMER 2

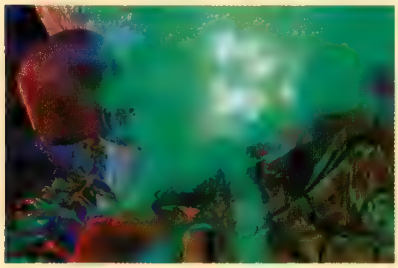
The graphics artists are putting a lot of work into visual clues that accentuate the 3D relief of the terrain. Intricate textures like water-corroded rock faces in tandem with pre-calculated lighting to cast shadow can be used to imply slope.

: DARK OMEN

Mindscape drag real-time strategy into the third dimension with *Dark Omen*. By MARK DONALD

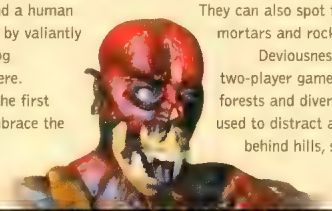
DARK OMEN IS THE SEQUEL TO THE sinisterly titled *Warhammer: Shadow Of The Horned Rat* (PCG 27, 90%), inspired by the Warhammer tabletop wargame by Games Workshop. The words Mindscape and wargames in one sentence may already have you turning the page... but NO! Wait. *Warhammer* was a real-time game bearing some resemblance to *Warcraft II*. It suffered in comparison because of a hostile interface, but Mindscape have learnt much since then.

Omen's producer, Geoff Gamon, recants the past: "*Shadow* was very faithful to the miniatures game. This time we've concentrated on what matters to a good computer game. *Dark Omen* is about battles. The depth is there if you want it, but it's not in your face. The game will have immediate pick-up-and-play appeal."



The missions form a continuous campaign. Wreck your army in one mission and the next will be much harder.

Their PlayStation experiences have taught them well, and *Dark Omen* looks like a game that's going to ram a well-aimed spear up the strategy genre's backside. It's set in a Neo-Tolkein fantasy world brimming with Orcs, Trolls and so on. You command a human mercenary force earning its upkeep by valiantly defending the realm from marauding greenskins – nothing uncommon there. What is extraordinary is that it is the first real-time strategy game to fully embrace the wonder of 3D.



Proper 3D

Terrain now has depth and you can zoom in and out, rotating past hills and through valleys like you're playing *SWIV 3D*. We saw a forested battlefield so lush it resembled a *Links LS* course. Trees are intricately drawn and translucent waterfalls could be seen flowing into rivers.

Gamon walked us through the fine detail: "We build up a pre-calculated relief map which enables us to attach attributes to the terrain. Swamps reduce movement, charging down hills gives combat bonuses, and it allows us to calculate 3D line of sight."

"*Dark Omen* is about battles. The depth is there if you want it, but it's not in your face. The game will have immediate pick-up-and-play appeal." – Geoff Gamon

The upshot is that 3D does away with all that fog of war business which was only ever a 2D fudge. Now you'll only be able to see enemy units if your men are truly within eyeshot of them and vice versa. If a unit is hidden behind terrain, then you won't know it's there. The benefits this breakthrough offers are immense. Taking high ground is now as important as it would be on a real battlefield. Put archers on a hill and they'll be able to survey and target much more of the battlefield. They can also spot for indirect firing artillery like siege mortars and rock lobbers.

Deviousness will be compulsory, especially in a two-player game. Regiments can ambush from forests and diversionary frontal assaults can be used to distract attention from regiments, unseen behind hills, sneaking around the enemy's rear.

Structured combat

Unlike other real-time games, Gamon is keen to ensure that combat won't just degenerate into an unseemly scrum over which you have little influence. Your forces are formed into regiments which can adopt different formations depending on the situations. Cavalry on the charge, for example, can assume the lethal lance formation. The variety of regiments is immense, over 40, including Ogres, Elves, giant Treemen, mounted pistoliers, cannon and a steam driven tank. Your forces can be further supplemented with heroes, wizards and magic items. The cast of evil ranged against you is even more imaginative. In addition to hordes of Orcs and Goblins there are undead Skeletons, Chariot Riders, Mummies, Vampires and Wraiths among others.

The two-player game is particularly worth a mention because it builds on the experience points system in the single-player game. It allows players to fight out an entire campaign between them, building up their forces abilities and strengths as they progress. Thus the effect of one battle has a bearing, for better or worse, on the next. Deathmatch also enables you to field the forces of the undead or the Orcs and Goblins and to design your own army.

Dark Omen's appeal lies in its depth. The tactical possibilities will wring you dry of cunning, the magic system goes far beyond *Warcraft's* and there will be a 36-mission branching campaign. The route you take through the missions will have consequences for later battles. It's looking extremely slickly designed and ultimately that was the only failing of the original. We hunger for it like starving men. PCG

WHY THE OMENS ARE GOOD FOR *WARHAMMER 2*

- **It's the first real-time strategy game to use 3D properly.**
- **The battles amount to rather more than an almighty tank or Ogre scrum.**
- **The biggest playtesting experiment in the world will ensure the armies are balanced.**
- **It supports graphic accelerator cards.**
- **It features the undead and we like them around here.**

Developer	Mindscape	How complete	60%
UK Publisher	Mindscape	Release date	October

SCOOP! Your first look at...

ATOMIC BO

Do you like all the little bits of art we found? Well, we had to get them, because nearly all of the screens look the same, apart from some fairly different backgrounds.

MBERMAN

At last! The world's fastest multi-player puzzle game is finally coming to the PC, souped up and ready to take ten players.

By STEVE OWEN

IN LAST YEAR'S TOP 100, WE PLACED *Dynablaster*, a little known game by Ubi Soft, at position number 7. It was one of the simplest games you could buy for your PC, and yet we all absolutely loved it. Perhaps the only thing against it was that it was an absolute, unashamed rip-off of Hudson Soft's *Bomberman*, a game that originally appeared on the PC engine in 1989 before settling most comfortably as *Super Bomberman* on the SNES.

The concept is deliciously simple: you are a bomberman. Your task is to destroy any other bombermen on screen (usually up to three but sometimes more). Your one skill is the ability to drop Batman-style round bombs with short fuses. After about three seconds, these detonate, firing out an explosive force in any direction not blocked by a solid wall. Semi-solid walls halt the force, but also disintegrate. Hopefully you can tell from this description that as you drop bombs against semi-solid walls, you begin to clear the initially claustrophobic area you start in. Suffice to say, if you are in the path of your own or your opponents' blasts, that's the end of your game.

Things pick up a little when certain weedy walls give way to power-ups, which allow you to, say, drop more than one ball at a time, run faster, drop time bombs, kick bombs away from where you dropped them and even knock them over walls. It seems to start fairly calmly, but within a few seconds, up to four humans are running around like nutters, dropping bombs and avoiding explosions, while constantly finding some way to trap their opponents.

It's such a perfect, simple, enjoyable game that it's astounding it's never been seen on the PC before. We asked the producer/director Jeremy Airey why the transition took so long. "It seems that oddly enough, nobody ever really thought about it. Frame rate on slow systems may be a reason. I guess it's a good thing, because now Interplay get to publish it! Also, there were network performance and compatibility issues. On a console you know what you're working with, and if it works, it works."

That plonker in the middle has just blown himself up, unless Mr White trapped him in his little den first.

Network support

Jeremy mentions "network performance" because of the rather cunning system they're incorporating. Up to ten players can take part in one game over the Internet, modem, serial cable or network, mimicking the stunning *Bomberman X* console version that was only available in Japan. You can also gather several people around one PC with a combination of keys and joysticks. Or mix all these bits together to get a big game going.

Jeremy's happy to admit that there's nothing quite like a story to get in the way of a good game. "We don't have any story mode in *Atomic Bomberman*. All we have is Battle mode. After all, that is the meat of the game. You can play one-player games in Battle mode against our AI characters." But that's the only missing part from the original *Super Bomberman*. They've also added plenty of new features, but Jeremy is at pains to point out that the classic game is still there if you'd prefer.

Mass appeal

"We have made the game 100% customisable, so anything you like, don't like, or find is missing, you can add, adjust, replace, etc. We realise that there are a number of *Bomberman* games out there, and we didn't want to cater to any one group. In a perfect world we make everybody happy, and that's what we're hoping for with this." But Interplay are also taking advantage of the PC's power: "All the death animations are new. There will be a lot – different personalities, different reactions to certain deaths. For instance, when he gets trapped behind a bomb and realises it's hopeless, he might shrug his shoulders, pull out a gun and then shoot himself in the head. Or he might panic, scream, and try to climb up one of the barriers that has trapped him. We also tried some animated icons and power-ups, but it made everything look really busy. It looked good on paper, but it turned out to be a bad idea. We do have nice pick-up icons, though."

"The game is 100% customisable, so anything you like, don't like, or find is missing, you can add, adjust or replace." – Jeremy Airey

He clearly knows his stuff. Has Jeremy been playing the game since the mid-Eighties? "Haven't we all? Of course. Interplay have many *Bomberman* groupies. It was these guys that helped us acquire and pursue the licence."

Are you the best *Bomberman* player on your team? "I doubt it. My play style doesn't give me a gauge, though. I love to wreak havoc on other players, even at the expense of my own bomberman's well being. My pleasure is their pain."

We shall all be enjoying similar levels of pleasure and pain shortly. PCG

ATOMIC BOMBERMAN WILL BE AN EXPLOSIVE SUCCESS BECAUSE...

- **It is one of the consoles' defining moments, rated by some as being the finest multi-player game ever.**
- **You can get everyone around your PC, or take on people over the Internet.**
- **Even your grandmother could get the hang of the simple control system.**
- **You can play the classic game, or enjoy the host of power-ups Interplay are adding.**

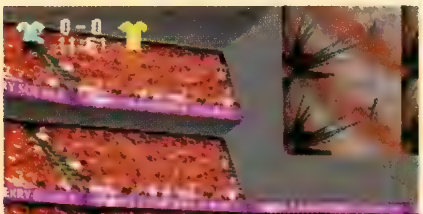
Developer	Interplay	How complete	80%
UK Publisher	Interplay	Release date	June

SCOOP! Your first look at...

INTERNATIONAL

Matchday is a classic giant-killing act: the bargain-basement Brits with their gameplay vs FIFA's big shot North Americans and their fancy graphics.

Not ably demonstrated here, the sprint feature is a nice touch as is the kick ahead, enabling a player to run faster when in possession of the ball.



MATCHDAY 97

We talk to *Matchday* creator Jon Ritman about 1997 and all that.

By MARK DONALD

BEFORE WE KICK OFF THE SCOOP PROPER there's just time to reel off some fuzzy, black-and-white footage of yesteryear. Back when I used to come home from school after a game of football, I'd sit in front of my Spectrum and want to play more football. The choice, if you could call it that, was Arctic's stickmen travesty, which I'd rather hammer nails into my legs than play, or going round to my C64 mate's house to play *International Soccer*. That was until Jon Ritman saved us from C64 derision with *Matchday*. It was a game that Spectrum owners could be proud of. Then came *Matchday 2* and that was great too. Since then football lovers have graduated up the divisions through *Kick Off* and *SWOS*, but have never found a premier game in the 3D artistry of *FIFA* or *Actua*. Maybe it's just us, but football nowadays just ain't as good as it used to be.

But Jon Ritman, director of Cranberry Source, is managing a comeback with a 3D footie game, currently titled *International Matchday 97*. If anyone can bring football home, he can. So we sent a cloth-capped scout down to his Finchley School of Excellence to see what he was playing at.

New philosophy

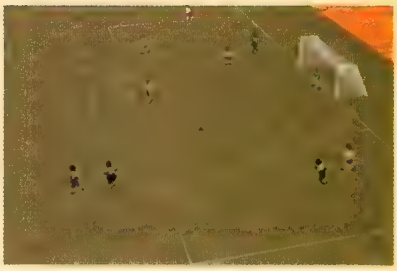
One glance at *Matchday* reveals its rejection of the *FIFA 97* 'sim' approach. Ritman explains his philosophy: "You can't replicate with a joystick what someone can do with their body. You should, therefore, just try to make the best possible game. Football does work as a game. There's so much variety in the way you can combine moves, so every single game is completely different."

What we, at PC GAMER, want from a football game is speed, control, a good field of vision, decent player AI and no bugs. Jon, the wily old pro, reckons *Matchday* can deliver. "This is a game with depth. You're not going to win the league in the first week. You'll gradually learn to become an expert."

We played it and, indeed, discovered the interface to be Swarfega slick. But, plainly, it'll require considerable practice before you are bicycle kicking with Ginola-like proficiency. In the name of absolute control, *Matchday* eschews the idea of having separate pass and shoot buttons. Instead, there are three kick buttons. So with a single press you perform a high lob, or a low hard kick, or a grass cutter. The longer you hold the button the harder the kick. When the ball is in the air, overhead kicks, headers and diving headers are yours for the attempting. Combos allow you to backheel, chip players and, with the shoulder pads, to put curve on the ball. You can even apply back-spin to deliver delicious hanging crosses into the box.

On-pitch player selection is particularly innovative as, for a brief moment, you control both the kicking player and the receiving player. If the pass is deflected, you can react immediately. This also operates in defence. By zig-zagging two defenders in front of an attacker, you can retain control of both at once and crowd him out.

"You can't replicate with a joystick what someone can do with their body. You should, therefore, just try to make the best possible game." – Jon Ritman



Crowd noise has been sampled for each team – samba rhythms for Brazil; drunken chanting for England.

Hi-res graphics

The speed and vision problems are immediately solved by *Matchday's* graphical approach. No-one could accuse the graphics of being dangerously attractive. They are simply effective. But we invoked the name of *SWOS* and remembered that the small size of the sprites keeps the game playing at speed. Moreover, pretty but pointless camera angles are out as Jon explains, "We've pulled our camera angles out so you can see as many players as possible. 2D games gain a lot because so much of the pitch is visible. *Matchday* has the player control of a 3D game, while hi-res graphics allow us to draw small players which still look the part and enable you to see. That's exactly what I want."

Most excitingly of all, though, *Matchday* allows you to customise your own team. But rather than hiring some statto to pretend he can scientifically reduce every player in the football league to an algorithm, *Matchday* allows you to configure your players precisely. This is done by distributing skill points between three attributes: speed, kick power and stamina. So you can create defenders that kick like mules and forwards with the speed of the puma, or whatever footballing philosophy you subscribe to. Arsenal fans will have a field day at last. Then you change your players' names to whatever makes you happy.

Matchday contains all the usual competition and tactical formation stuff, while the AI team's skill levels are based on FIFA international rankings. We've played an early version and reckon it could go all the way. Though we can't vouch for the complete elimination of magic goal manoeuvres, Ritman is fanatical about hunting them down. More than anything, his drive to create the best football game around should make *Matchday* a winner. PCG

WHY *MATCHDAY* MIGHT CLIMB THE HALLOWED STEPS FIRST

- ***Matchday* is concerned with gameplay, pure and simple.**
- **The goalkeeper isn't Superman for once. It helps.**
- **You can customise your players' attributes.**
- **It's got the old footballing maestro Jon Ritman on its team.**
- **The PC opposition isn't exactly up to much.**

Developer	Cranberry Source	How complete	75%
UK Publisher	In time	Release date	August/September

THIS MONTH

We proudly present the sauciest, sexiest and downright most gorgeous Eyewitness section ever. It appears to be sequel-frenzy time, with *Populous 3* looking lovely, *X-COM 3* appearing similar to its predecessors but surely pushing the genre's boundaries forward. But it's *LBA2*'s combination of isometric and 3D polygon renders that removes our eyeballs and sensuously sucks them. Add *Heavy Gear* and *GP Legends* and this is one helluva line-up.

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Populous: The

Heaven sent

You may think you are the supreme being anyway. With *Populous 3* you can prove it. By JAMES FLYNN

IT SEEMS WEIRD NOW, BUT when Peter Molyneux first touted demos of *Populous* around the major European publishers in 1988 most of them rejected it. It was, they considered, a totally new genre and therefore commercially unproven. And so they joined the ranks of companies that have made such sound commercial moves as rejecting the Beatles, saying Trivial Pursuit would never sell and investing in Barings Bank. Electronic Arts have been laughing ever since.

Populous has sold nigh on four million copies worldwide and the sequel, *Populous II*, hasn't performed too shabbily either. Even though its appearance on over ten platforms (from the original Amiga version to the Japanese only FM Towns Marty console) has helped these figures, the sales figures for ***Populous: The Third Coming*** will surely be massive.

The game, however, is less of a sequel and more of an evolution. Many of its playing elements will be familiar to players of the two previous incarnations, but the structure has been radically changed. The similarities are that the player is still a god, the objective is to wipe out the followers of other gods in the game, and one of the major tactics still involves building a large population base to increase your divine powers before you wreak vengeance upon unbelievers. The differences are basically everything else.

"It is very different from the other *Populous* games," comments project leader and lead programmer Alan Wright. "It's set over a finite number of levels and we've had a challenge in designing this game as we want it to appeal to core gamers. We want it to be a challenging game to compete with *C&C, Warcraft* and the like, but also and not purely for commercial reasons we want it to be accessible too."

Thirty levels and various bonus ones are planned, with players receiving new buildings and spells with the successful completion of each level. The levels have been choreographed to force the player to think tactically and make use of his burgeoning powers to the greatest effect. This sounds promising as there was essentially only one tactic worth using in *Populous*. Up to four shamen will now be competing for dominance of the same level and, unsurprisingly therefore, the game will also support four-player network play.

No drama here, but great landscape.

Whereas before the population could only be influenced, now the player has direct control over a shaman, who can be guided over the 3D landscape to do your bidding. Initially his role lies in converting the Wild Men that stumble aimlessly across the world to your religion. Converts then comprise the player's population base, which will add to your power. As the game progresses, the shaman's spell casting abilities come to the fore, but this time round Bullfrog have added the twist that spells can only be cast within the visual range of the shaman. This along with the addition of a range of specialist characters increases the game's strategic elements.

"We haven't got a very complex range of features in this game," comments Wright. "We've got a few types of people, a finite number of spells, a few types of buildings and it's basically a very simple feature set. But the way you combine these things does result in a very rich and complex game and we're learning new strategic techniques all the time." Nevertheless that still leaves enough room to include structures like spy centres, boat yards, temples and air ship hangers. Divine powers still include earthquakes, volcanoes, swamps, plagues and whirlwinds. You must also decide between fielding huge armies of peasant rabble or training up the chosen few as élite magic warriors.

Though the version of the game that PC GAMER saw was an early pre-alpha and Bullfrog stated that they hadn't yet started serious work on inserting the graphic elements, visually it still managed to be impressive. As the

MORE STAR WARS
LucasArts have revealed that a PC version of *Shadows Of The Empire* will be released sometime this autumn. Originally thought of as one of the Nintendo 64's showcase titles, because of the Star Wars link, it received a distinctly lukewarm reception upon release earlier this year.

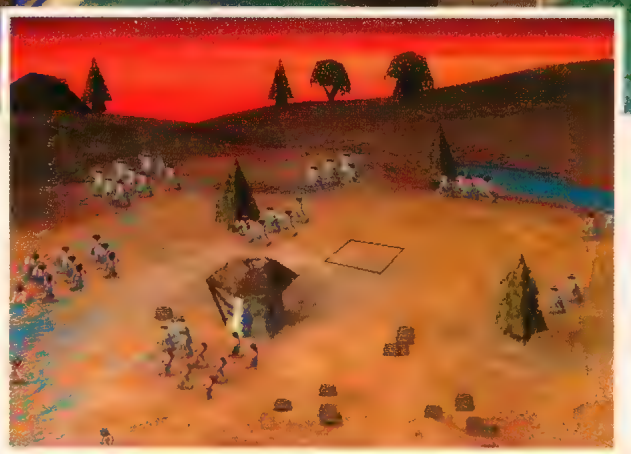
LucasArts also confirmed the game will have no multi-player option support, making it sound ever more like a contender for *Rebel Assault 3* status.

Shadows is being developed as a Windows 95 game only and is being enhanced for Direct 3D.

HMM... SUSPICIOUS
Something a little unusual might be going on. We tried to connect to LucasArts' Rebel HQ site this month, only to find that it's only possible if you use a copy of Internet Explorer 3. Is this for technical reasons or some kind of shady deal?

Third Coming

It's a tribal battering. Everyone camps in fields and braves poor toilet facilities.



screenshots show, the 3D worlds have been given an extreme curve, not only alluding to the fact that the game is set on small planets but also cleverly side-stepping the need for distance fogging. It's also fast, manipulating a fully textured, Gouraud-shaded map at a highly respectable frame rate with no optimisation yet in place. 3D card versions are likely.

With the game currently only needing just over 8Mb, the team has plenty of room to add the graphic touches that have become synonymous with Bullfrog games. Wright informs us, "Because we're using a new texturing method, part of which generates a whole 4Mb bitmap representing the world, we can dynamically affect that bitmap. We can have lava coming out of volcanoes and footprints in the snow, just little cosmetic touches that will add to the effect of being in this environment."

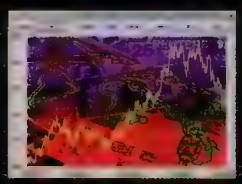
● *Populous: The Third Coming* is somewhat optimistically scheduled for September. We'll undoubtedly visit it again as the months slip by.

FIRE AT WILL

The autumn release of *Return Fire II* has been announced by MGM and Prolific. The original was a highly amusing action/strategy game (PCG 32, 79%), based on capture-the-flag with jeeps, tanks and helicopters instead of Cub Scouts. It had a great split-screen mode and we welcome its return.

PROFIT MOTIVE

Team 17, who've been quiet for a long time now, are getting into the fantasy management game with Profit Warning, the on-line game of financial speculation. It's ideal. You're given £100,000 virtual cash to spend on listed companies and actual share prices are updated every 15 minutes directly from the London Stock Exchange. It should appeal to readers of the Times but also offers that extra little incentive: hard cash. £15,000 in real terms is up for grabs. For further details check out Team 17's

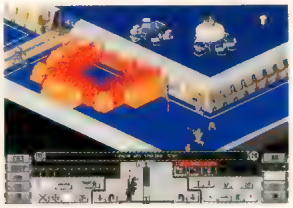


Web site: `http://www.team17.com/pw`

X-COM: Apocalypse

What a turn-up!

The long-awaited third instalment of the *X-COM* series is rounding the development bend and literally sprinting (okay, jogging slowly) into the final straight.



Although the graphics aren't all that we hoped for, *X-COM: Apocalypse* plays superbly.

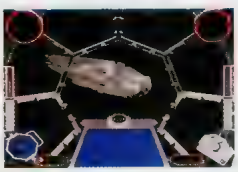
UNLIKE *TERROR FROM THE Deep*, ***X-COM: Apocalypse*** promises more than just a different setting, a new bunch of ETs and a practically impossible campaign. The isometric view, the icons, the research aspect and the ultimate kick-alien butt aim remain the same, but there are a few welcome changes that streamline, improve and imaginatively reinvent the old *X-COM* game for a 1997, *Command & Conquer*-obsessed audience.

For starters, *Apocalypse* is on a much smaller scale. All you have to worry about is the city of Mega Primus. Worry because it's besieged by a fresh army of alien invaders – large hulking blue things packing lasers; small, skittering orange blobs that try to suck your face off and bright yellow colossi with fists as big as Ford Fiestas, fangs longer than an Oxbridge rowing boat, and enough slobbering drool to fill an Olympic swimming pool. Nasty is not the word.

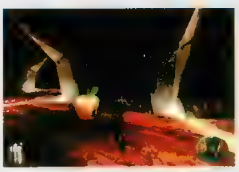
The city pays you for protection and so, acting like a gang of extraterrestrial ghostbusters, you must build bases, train soldiers and research new equipment to counter the invasion. Again, capturing/defeating aliens tells you more about them. Research into the Biological, Quantum and Manufacture fields enables you to reverse-engineer the alien weaponry and to develop new facilities. But as ever you'll need to manage your resources. Which branch of science affords you the best chance of success against the invading aliens? Should you plough more resources into alien research or spend more cash on soldiers and arms? Ooh, decisions, decisions.

By far the biggest difference, however, is the switch from turn-based combat to real-time. The old turn option is retained for purists, but the real-time feels great. As in *Space Hulk*, you can pause the game at any time, which allows you to give movement orders, switch weaponry and so on. When you're happy with your strategy, you simply hit the play button and your soldiers carry out your orders in real-time, moving, running

PC GAMER Recommended Games we love that are in the shops now.



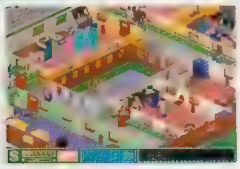
X-Wing vs TIE Fighter Virgin (PCG 43, 95%)
Do you really need 50 of our sweat-stained words to flog this game to you? It's Star Wars and it's epic. Superlatives fail us, but if you want to know more, read our extensive review in last month's issue of PCG. Of course, it's very little use if you're not on-line, but otherwise it's the fabbest experience available on the PC. If you like that sort of thing.



MDK Interplay (PCG 41, 94%)
A 3D action game that's nigh on revolutionary and slicker than one of Kurt's Dunlop suits. We still marvel at its inventive gameplay while perfecting our cold-blooded killing technique. *Tomb Raider* is the ideal alternative or, indeed, willing partner for your games collection. We advise you to get one or the other. No, in fact, get them both.

Carmageddon SCI (PCG 44, 88%)
Now showing in our Recommended box for one month only. It's tasteless, sick, hit-and-run fun that's so satisfying because the physics are so right-on. It's great rage therapy – we've all been much more relaxed since playing it – but it'll all be over in a couple of weeks. You'll get bored, you'll move on, but don't worry, we'll recommend you something else.

Quake GT (PCG 35, 95%)
Another month on and we're still sneaking bouts of *Quake* in at lunchtime, before switching to *X-Wing vs TIE* after work. It says something for the importance of a game when we'll give up eating for it. Even when no-one else will play, certain desperadoes just chuck a load of Reaper Bots in and name them after ex-girlfriends.



Theme Hospital Electronic Arts (PCG 42, 85%)
There's no less sickness in this than in *Carmageddon* but we reckon this'll last you that bit longer. Delivering much the same comfort, aches and pains as *Theme Park*, even the national newspapers have been working themselves into feverish excitement over this one. Although they just want to make up some story about it denigrating the NHS. Tch, eh?

Flying Corps Empire (PCG 40, 92%)
The PC's current flight sim of choice, there's every possibility of *Flying Corps* staging a *GP2*-like squat in our Recommended section. Although *TFX3: F-22* and *Red Baron II* are closing in, don't be put off by the apparent lack of Sidewinder missiles in this one – a Vickers machine gun and a stock of gentlemanly ripostes do just as well.

Your squad aren't completely helpless without you – they'll reload all by themselves.

or crawling around the detailed 3D landscape. Engagements that would have taken two and a half hours to finish in *Terror From The Deep* can now be over in minutes. SVGA soldiers kneel bravely in raging crossfires, laser bolts singe the walls, while grenades lay waste to entire areas.

It's difficult to monitor the action at times, and it's tempting just to keep the real-time action running rather than methodically halt it to plan attack and defence as the situation evolves. But if MicroProse get the balance right, *X-COM: Apocalypse* looks like being as good as everyone hoped it would be. Without ditching the original concept, The Gollops have altered the game so subtly and excitingly that June/July seems like a long, long wait for the finished version.

● *X-COM Apocalypse* will be published by MicroProse when it's good and ready.

The ZAR of Russia

Standing somewhat curiously for Zone of Artificial Resources, *ZAR* is one of three releases from new Russian developers Auric Vision. Sort of a cross between *Doom* and *MechWarrior*, *ZAR's* a first-person shoot-'em-up which sees you legging it around lovely, hilly, outdoor environments.

There's nothing very original about it, but it looks and plays so surprisingly well that you won't really mind. The very basic idea is that a computer network has gone seriously wrong and is now churning out enemy robots which roam the landscape looking to send all their ammunition in your direction – in other words, the perfect ingredients for all manner of frenzied shooting action.

Particularly impressive is the 3D engine, which incorporates nice graphical touches including animated water and sky and realistic lighting effects. Plus, should you wish to, you can even blow holes in the ground with any one of your ten ridiculously large guns. Most incredible of all, though, it even runs smoothly on a low-end Pentium in SVGA without looking like a Spectrum game.

● We urge you to investigate the playable demo on this month's disc.

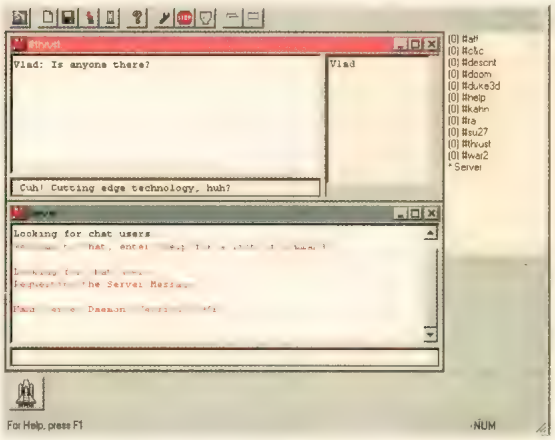
Thrusting upwards

Read about an Internet site offering multi-player harmony and win a free account. Oh, go on.

Thrust World is a brand new Internet gaming site set up to specifically handle multi-player games. As well as an e-mail address, unlimited Internet access (including Web sites and newsgroups), and personal server space for setting up a home page, you also get unlimited on-line gaming time. We were told that the ping time is usually 100-150ms, and never more than 200ms, which is plenty small enough for the likes of *Red Alert*, while 150ms is just about right for *Quake*. The reason this is so much quicker than any other service is that you don't have to go through your own Internet provider. You just connect directly to Thrust World through a local 0845 number. Unfortunately we weren't able to test out the speed claims as the service was just starting up. Still, by the time you read this you should to be able to test it and we'll report back next month with our results.

Nevertheless, if you find a challenger there, you can be playing any Internet or network ready game, with, naturally, *Quake*, *Red Alert* and *Warcraft II* occupying plenty of processor cycles. *X-Wing vs TIE Fighter* is expected to be there when it launches this month.

But very best of all, there will soon be at least five PC GAMER readers there, as we've been given five year-long accounts to give you. It normally costs £17.99 a month, so that works out at, um, carry the five, just about a grand's worth of accounts. All you have to do to win is search within your immense knowledge of games of the past and tell us which one would have benefited most from the Internet revolution. Reject *Populous* as too obvious, and then jot down your answer on the back of an envelope, sending it to: Thrust! Parry! PC GAMER, Future Publishing, 30 Monmouth Street, Bath BA1 2BW. The letter box is sealed on 30 June, 1997.



FRANKENSTEIN'S QUAKE

The demand for ever more twisted *Quake* novelties is reaching epidemic proportions. Check out http://207.136.90.149/wctc/ to view the creation of some godforsaken *Quake/Warcraft* abomination. It may be missing the point slightly but it's a co-operative game and you can pick up axes and wood and stuff. There are eight classes to choose from – choose dwarven demolition squad for a quick game.

REVOLUTIONS PER MINUTE

Cranberry Source claim their latest graphics engine will shift a revolutionary 50,000 polygons on screen as opposed to the present average of 5000. Although Polar Sprouts were more of a failed putsch, we have seen an impressive demonstration of the engine's powers. We'll see how it bears up 18 months down the line when Cranberry's next games, *Redemption* and *Domination*, are due.

GIVE 'EM AN OSCAR

The computer industry's Oscars equivalent, the slightly less glam Spotlight Awards, have announced their winners for 1996. *Quake*, for Best Sound Effects and Best On-line Game; *Duke Nukem 3D*, *Best Action Game*; and *Civ II* for Best PC Game. Hurrah!

Play Dirty

Go for the legs.

With the unprecedented 64 bit power of N64, the dark side of the force is under your thumb. A revolutionary controller gives you 360° freedom to explore a real time, 3 dimensional universe straight from the epic trilogy. A blinding arsenal of weapons, 10 play levels and 4 different game modes makes every mission different. So you can entangle the legs of the AT-ATs with the tow-cables of your snow speeder as easily as you annihilate storm trooper after storm trooper with your blaster. Power up Star Wars: Shadows of the Empire and prepare yourself to step into the legacy.

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STAR WARS
SHADOWS OF THE EMPIRE

NINTENDO 64

Get into it.

Wreckin' Crew

Getting wrecked

Wreckin' Crew may sound more like a pre-pubescent, androgynous boy band than a driving game. But it is. A driving game, that is. By MATTHEW (BOY RACER) PIERCE

HAVING SPENT MOST OF MY higher education playing *Super Mario Kart* on the SNES, I've been waiting for a similarly addictive cartoon-style racer on the PC ever since. So it was with more than a modicum of excitement that I listened to Telstar tell me of ***Wreckin' Crew*** – a game which is, they say, based firmly on classics such as *Mario Kart*, *Power Drift* and *Hard Driving*. Furthermore, they also promise an incredibly fast game engine with the freedom to race whichever route you like through winding streets, all without having to worry about things like gear ratios and wing settings.

The cars in *Wreckin' Crew* are, in fact, hot rods – stylised and souped-up vehicles from 1957 Chevys to beaten Ford pick-ups, each with their own individual strengths and weaknesses. From the screenshots you may think the graphics appear a little primitive, but it does move extremely fast, and as the classic SNES racer proved, graphics aren't really that important if the game plays well.

In a similar vein to SCI's *Carmageddon*, the circuits in *Wreckin' Crew* are littered with power-ups offering weapons, turbo boosts and repair kits to your already formidable vehicle. Stunt driving, an eight-player network option, and individual split-screen 'deathmatch' races should ensure the game has longevity, although one can't help but worry that it may suffer in comparison with the ultra violent and surprisingly swift *Carmageddon*. We shall see...

● *Wreckin' Crew* will be reviewed in next month's PC GAMER.

It may look a bit basic, but the cartoon-style graphics may disguise a classic racer.

The Network Q factor

Thanks to unusual atmospheric conditions and very similar naming, PC GAMER made a bit of a cock-up in last month's They're Back! EuroPress' *Network Q RAC Rally* game now available for £10 is not the same as *Network Q RAC Rally Championship*, the game we reviewed. The latter game is excellent and still riding high in the charts. Apologies to Europress and any of you we may have mislead.

Broken Sword II

Cutting edge adventuring

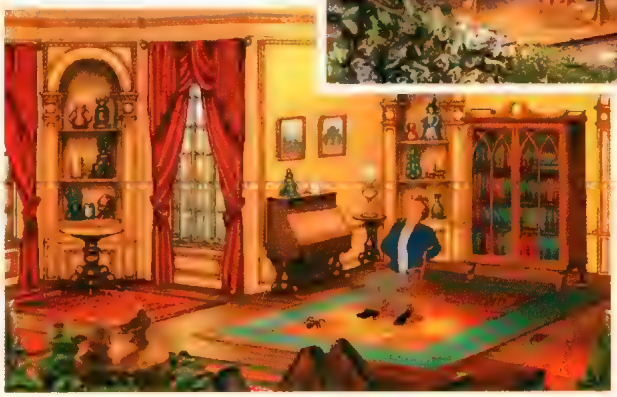
Finally, we have news of the sequel to one of the best adventures of last year. **By MATTHEW PIERCE**

BROKEN SWORD MANAGED TO breath new life back into the point-and-click genre last year. Its success was due mainly to a wonderfully imaginative story-line and superb characterisation, and it was rewarded with a Game of Distinction award and 90% in our hallowed pages.

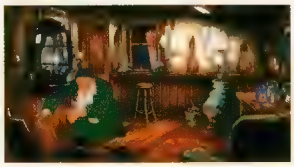
It was with considerable excitement, then, that I chatted to Charles Cecil, managing director of developers Revolution, about the sequel, cunningly titled ***Broken Sword II: The Smoking Mirror***. "It's going to be considerably different from the original," begins Cecil. "We've learned a lot from the first game, which has allowed us to strengthen the plot and the gameplay. There are far more puzzles that are directly related to the plot now. Plus the technology has been improved."

As you can see from the screenshots, the overall look of the game is the same – with the cartoon-style characters remaining, although a lot more work has gone into integrating them more successfully into the backgrounds. New shadowing and transparency effects help give the impression that the characters belong in the locations, while dramatic smoke and steam effects are used to add atmosphere.

It's of similar size to the original in terms of locations and characters, although Cecil describes the story-line as, "A lot darker, grittier and more involving than the first game."



The cartoon-style graphics have been improved, while the story-line takes Nico and George on a much darker adventure involving drug barons and black magic.



Set two years after the original, it again features the main characters, Nico and George, who are now investigating an American crime syndicate. The plot moves the game through a diverse set of locations from modern day America to the ancient Mayan civilisation; with drug barons, human sacrifices and the apocalypse all playing a part along the way.

Cecil says: "We really believe that our adventure games should be driven by plot and characters, and *Broken Sword II* will be no exception. Having said that, our games have always bettered each other in terms of technology. I'm very pleased with the way it's looking and confident it will be much better than the original."

● *Broken Sword II* is due to be released by Virgin in September.

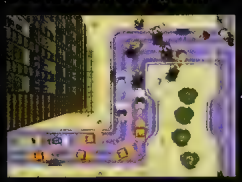
Nice try

Rugby and computers have hardly been a match made in heaven so far. But unanimous PlayStation praise for Codemasters' *Jonah Lomu Rugby* persuaded us to grant the PC version an audience. And, though we hesitate to say it, Codemasters may well have pulled off not only a playable rugby game but an enjoyable one. Outlandish fantasy, we know. Maybe the current console influence on PC games isn't all bad.

Codemasters are aiming for a bright, arcade sim full of attacking flair, but they've also managed to cram in all the rugby, er, subtleties that have been missing till now. For this reason a joypad with four buttons and shoulder switches is de rigueur. Memorising the button combinations is like learning a new language, but on-screen help is to hand and enables all kinds of fancy moves to be attempted. You can maul, when rucking you can tell players to hang around the fringes or join in, you can dig in during scrums, shorten the line-out, side step and even call a mark, for pity's sake. Absolute control is yours. *Lomu* is also intended to be compatible with a four-way joypad connector, which would be great fun if only they worked.

● **You can tackle *Jonah Lomu Rugby* in mid-June.**

LET'S GO!
DMA Design, the brains behind the *Lemmings* phenomenon, have been bought by Gremlin. Previously published through BMG, it's another blow for the huge European publishing company that has also pulled out of the US this month. Gremlin, however, are looking strong, with over 250 development staff, and as they propose to go public, this is presumably a move to make them look more attractive. DMA are looking happy too, with *Grand Theft Auto* due soon.



THE SECOND COMING
We really liked the Apocalypse 3D, but it's already been superseded. The Apocalypse 3Dx, which should be available by the time you read this, has the desperately required bilinear filtering built in and is apparently between 30 and 40% faster than the original. This should also make it 40% faster than the 3Dfx card. Best of all, it's the same price (£150 or thereabouts) and there's a handy upgrade deal – £80 all-in for anyone with the original Apocalypse or any of the 3Dfx cards, and you get four free games for that too. We'll review it next month, together with some of the other cards that have appeared since our last round-up.

GP Legends

Sierra's chequered past

A driving game set in the '60s. Let's hope it owes more to 'The Italian Job' than 'Herbie Rides Again'.

IN CONTRAST TO THE GLUT OF futuristic racers which are currently dominating the PC, ***Grand Prix Legends*** promises to be a refreshingly nostalgic release. Unlike flight sims, which have successfully recreated combat from almost every decade of this century, there has yet to be a driving game which sees you behind the wheel of a vintage car. Sierra, however, mean to change all that with a game that hopes to faithfully reproduce Formula One racing, circa 1967.

David Kaemmer, chief technology officer of developers Papyrus, said, "We picked 1967 because that was the last year of the cigarette-shaped cars, and it has a very romantic feel. The tracks of the '60s were more spectacular and dangerous. Several were public roads with nothing but bales of hay between the houses and the road."

Each of the Grand Prix circuit's 11 tracks will feature in the game, along with seven cars which can all be modified and upgraded as races are won and prize money is earned. A true 3D cockpit will also make in-game vehicle adjustments possible by toggling the controls on the active display – an important feature considering how much more sensitive the cars are to braking and steering than their contemporaries. Even more surprising, but apparently authentic according to Papyrus, are many of the tracks' natural jumps, which demand that drivers have to master in-flight steering and accelerating.

(Above) The driver's arms look a bit dodgy at the moment. (Left) Just take a look at their bodywork. Sex on wheels or what?

In addition to furnishing us with screenshots, Papyrus tell us *GP Legends* will support up to eight players over the Internet or a LAN which could boost its popularity no end.

With a back catalogue including *Indy 500* and *NASCAR 2*, the developers' credentials aren't in question. What is slightly questionable, though, is the fact that anyone actually wants to drive around in 30-year-old cars. They may look classy, but they're not exactly Ferrari Testarossas, are they? Plus, if you flip it over, chances are you're going to travel a few hundred yards on your head – a potentially messy business. Whether that's your idea of fun or not, you'll have to wait for the time being.

● *Grand Prix Legends* won't be appearing until the beginning of next year at the very earliest.

Riven

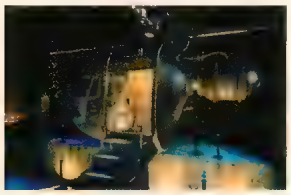
The Myst-eerie continues

The makers of *Riven* speak! But they still won't show us the game!

By MARK DONALD

MORE NEWS ON ***RIVEN***, THE secrecy-shrouded sequel to *Myst* and, it seems, the most expensive PC game ever. An exclusive press conference was held in the Twin Peaks territory of Spokane, Washington, last month, at Cyan's headquarters. Our operative disguised himself as a moose and hung around looking inconspicuous.

No game was shown, but attendees did get a video presentation. Showing various scenes and animations from the game, it proved again just how beautiful *Riven* will be. "It still takes the same hour it used to take to render an image," said Cyan co-founder Robin Miller. "But we can put in 100 times the amount of detail."



The team denied that *Riven's* engine – a point-and-click outing like *Myst* – is out of date. "Right from the start, we pursued other options," said Robin's brother, Rand. "But we want *Riven* to be gigantic. Once you start to look at virtual things, the world's small." Keeping that graphical quality was also important. "By not going for a *Doom* like engine, we bought ourselves a lot of detail and resolution," he added.

Constant allusion to movies (some claim the arrival of top Hollywood production designer Richard Vanerwende is the difference between *Myst* and *Riven*) prompted your almost Elk-clad reporter to ask whether the team actually play games. "No," said Robin, candidly, although brother Rand claimed he used to. Richard has only ever really played *Myst*. "I think that's one of our strengths," he said.

We discovered that *Riven* does depart from *Myst* in some ways. There's full-screen animation and live-action actors to interact with, for a start. Cyan have also attempted to make the puzzles less abstract, more part of the game world. And the trio claimed *Riven* will look much more lively than *Myst*. On the playing front, you'll now get a little sack in which to put objects, though the team stress there will be none of the hoarding encouraged by some titles. Phew, eh?

Riven will probably span five CDs when it's released by Broderbund this autumn. The whole software-in-the-supermarket buying crowd might be waiting with bated breath (articles have appeared in all the quality broadsheets as well as magazines like Time) but at least the boys can't disappoint themselves. "We don't think very highly of ourselves," said Rand when a French journalist tried to compare them to the film making Cohen brothers. "We just live normal lives and make this game in the basement." Odd comment, but then again... odd question.

● *Riven* may appear in the autumn.

Or is it a [illegible] from *Riven*?

Take No Prisoners

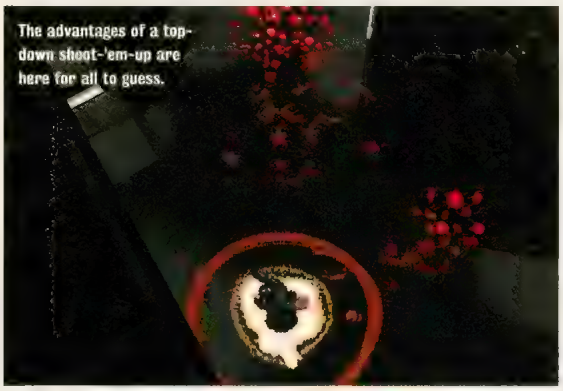
Raven leave their fantasy world for a cyberpunk future of shooting things.

Take No Prisoners, a top-down *Gauntlet*-esque blaster being developed by Raven, invites instant comparisons with ***Mageslayer***, a top-down *Gauntlet*-esque blaster being developed by Raven (see the Scoop in PCG 41).

Why didn't we call the Monopolies and Mergers committee? Closer investigation reveals that ***TNP*** is not set in magic woods or a castle but in a post-apocalyptic city, loaded with shiny weaponry. Even better, ***TNP*** is chock full of bleak humour. You'll liquidise bewildered Yuppies in trainers, who lob grenades with tennis rackets; toast their Nerdy sidekicks with your flame-thrower and then run away from devil-may-care Psychos, sporting strap-on dynamite. ***TNP's*** publishers, Broderbund, are trying to develop a distinct games brand. "The last thing we want is gamers bumping into *Take No Prisoners* and thinking it's a spelling product," VP Ken Goldstein said recently (we share his concern).

Raven's own VAMPIRE 3D engine creates the multi-level environments, which fly out of the screen like canyons and make for giddying gameplay. Characters, though, are sprites. Raven chose sprites for the sake of graphic detail and speed. Each one displays its own characteristics, hobbies and interests, etc. Finally, Raven are really pushing the boat out with their level design – in this case *Heretic's* team are coming up with 20, plus 6 multi-player scenarios.

● *Take No Prisoners* will break out in November. We'll monitor its progress carefully.



The advantages of a top-down shoot-'em-up are here for all to guess.

COUNTERSTRUCK

In what can only be seen as an admission that the original version wasn't up to scratch, Westwood have announced a forthcoming patch for ***C&C: Counterstrike***. Designed to address several problems which were somehow overlooked before the release

of the finished game, the patch will apparently do the following: unlock the maps, eliminating the need for everyone in a multi-player game to have a ***Counterstrike*** disc; abolish the 'early tank rush' tactic by governing the speed of tank construction at the start of the game; add a hard difficulty to the one-player game; and, most importantly, allow you to use all the new units in the multi-player game. Although quite how the latter got missed out of the original version is anyone's guess.

OOO, THAT'S FAST... ER

Chuck your P200 MMX PC away now. June sees the arrival of the P233 MMX chip. That means that it's a whole one-sixth quicker, which has to be good, and will no doubt be the excuse Microsoft have been waiting for to release the follow-up to their superb football game, so that those sprites can charge up the isometric field even quicker.

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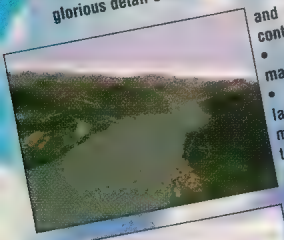

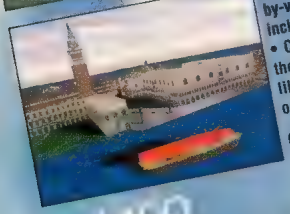

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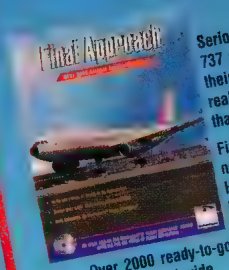
LOOKING AHEAD

Final Approach



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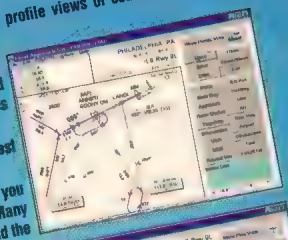

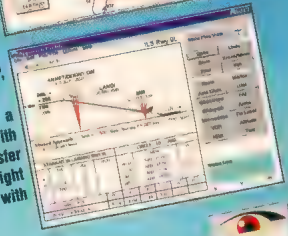

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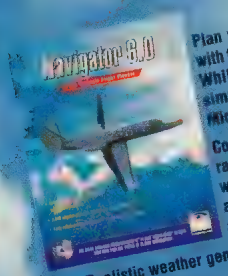
Navigator 6.0



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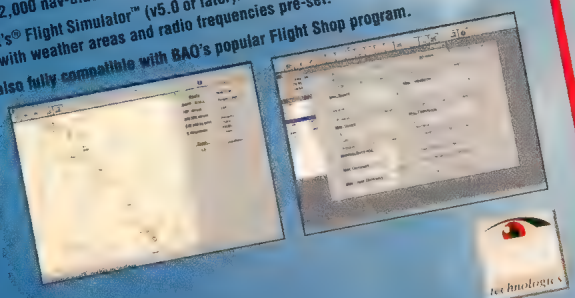
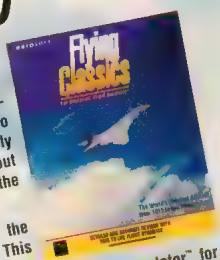


Flying Classics



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Extreme Assault

Clear and present danger

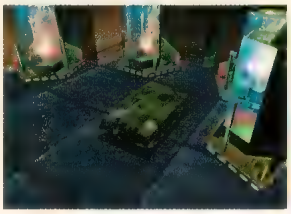
It is our instinct to destroy things of beauty – Blue Byte understand this well.

By STEVE OWEN

WE HAD HIGH HOPES FOR Bluebyte's underwater shoot-'em-up *Archimedean Dynasty*, but it failed to deliver on the graphical or playability stakes. But now the German developer has souped up its engine to produce what appears to be far superior to the wet effort of before.

Extreme Assault is how the game was christened, and adequately named it is too. It's hard to directly pigeon-hole the game. Perhaps you could see it as a cross between a simulation and a shoot-'em-up; a bit like *Terminal Velocity* or *Hellbender*, but with a more controlled and varied mission structure. You pilot a helicopter, and later a tank, and must do things like escort convoys or seek and destroy strange alien things.

And, as it turns out, they are. Not bad and not a 3D accelerator card in sight.



Everyone in the office who sees these pictures says "Are those in-game shots?"

Yet we are talking about more than a simple shoot-'em-up. It's the graphics that impressed us most. They were surprisingly smooth on a P100 and drew us to a distant horizon before adding translucent explosions – all with no 3D card required. It'll be slick, sleek, fun. We hope.

● It will be released in August.

We're intrigued...

... by Crush! and their hush-hush new football game. It's so secret we're not even allowed to divulge its name. But we have been privy to some early screenshots which suggest that, for arcade style, it could go head to head with *FIFA*.

Yet, stretching credulity almost beyond reason, it will also delve extensively into the management side of things. The proposed on-line support represents its best shot for glory, though. Backed to the tune of lashings of cash by the Japanese Sun Corporation, Crush! are intent on setting up a dedicated server which will be their answer to Battlenet. From here they'll run a global, virtual Football League with weekly fixtures, cups, relegation and all the other fine furnishings the home of football can offer. Find out next month whether it'll be the future of Saturday afternoons. Or not.

BLOODCLOT

In a move which displays a confidence bordering on arrogance, Monolith have decided to release a level editor for *Blood* on their Web site, as well as announcing the release of the game's expansion pack, titled *Passage To Transylvania* before the game has even been released. The expansion pack will contain nine new levels and will be released in mid-June. Expect the actual game to be released this month sometime.

NOIR BLACKOUT

Codemasters are no longer releasing *Noir*. Instead they're suing US publishers Cyberdreams for flooding the UK with import copies.

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LBA2

A little more adventurous

An early prototype of *Little Big Adventure 2* has fallen into PC GAMER'S hands. **By JONATHAN DAVIES**

"I KILLED MANY MEN FOR THIS," hissed Agent 140, slipping the gold CD into our hands. "Take care of it." And we certainly have. *Little Big Adventure* (PCG 13, 91%) was the best thing to come out of France since sliced baguettes, with its ceaseless imagination and gorgeous graphics, so our covert acquisition of an early, far-from complete version of its sequel is to be relished.

And an evening's enthusiastic inspection reveals that our favourite French blokes, Adeline, are on top form again after the mild disappointment that was *Time Commando* (PCG 34, 75%). ***Little Big Adventure 2*** begins in Twinsen's house, with his girlfriend asking him to go out and find some medicine for their pet dragon Dino-Fly. (As the game's entirely in French at the moment, you'll have to forgive us if our interpretation of events is a little shaky.) So out you pop and...

... *LBA2*'s main innovation strikes you. Interior locations are seen from the same fixed isometric view as in *LBA*. Step outside, however, and everything slips beautifully into true 3D textured polygon perspective. Twinsen gets bigger and smaller as he wanders into and out of the screen (he's still made from the same smoothed-off polygons as before), and, furthermore, a press of the Return key causes the view to be redrawn instantly from behind him. It's not the real-time 3D landscape that the best console games are managing these days, but it's a good deal prettier and more detailed than any of them.

LBA's world is thankfully a good deal less sinister than it was under enemy occupation in

We're too far away to understand what's going on here, but green skies are always a bad sign.

Where are they now?

With the release of *Dungeon Keeper*, no original members of the release date club remain. Rejoice!

Constructor (Acclaim)	June
Dark Colony (Gametek)	September
Dark Reign (Activision)	June
Deathtrap Dungeon (Eidos)	September
EarthSiege 3 (Sierra)	November
FIFA 98 (EA)	September
Grand Theft Auto (BMG)	May
Hardwar (Gremlin)	June
Hexen 2 (Activision)	September
Jedi Knights (LucasArts)	September
LBA2 (EA)	September
Populous 3 (Bullfrog)	September
Prey (3D Realms)	September 1998
Starcraft (Blizzard)	December
TFX3: F22 (DID)	September
Unreal (Epic)	September
Dark Omen (Mindscape)	October
X-COM Apocalypse (MicroProse)	June

QUAKE GETS AROUND

Quake, already the most promiscuous engine around, is getting even more licentious. Id have given permission for it to be used by six third-party developers. Raven (***Hexen II***) and 3D Realms (cast your gaze to the right) we already know about, but who are the others? The appearance of ***Quake Chess*** on the Net has done nothing to dampen rumours that the ***Chessmaster*** series is due for a serious shake up.

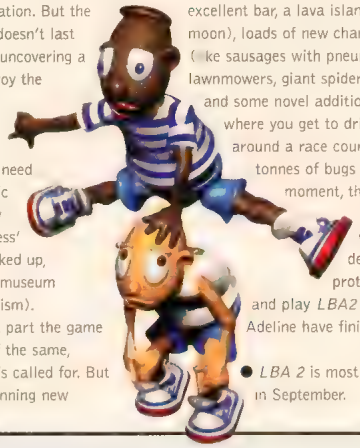
LITTLE COMPUTER BUGS

The latest madness to afflict the Japanese, the Tamagotchi virtual pet is about to land on our reserved shores. You monitor your new friend on a pocket LCD display, keep it fed, watered and happy. People have become so attached to them that a custody battle was fought over one in Japan. The pet died during proceedings.

Twinsen's world needs its colour and contrast controls adjusted

the first game. Indeed, Twinsen is hailed wherever he goes as a hero, thanks to his world-saving reputation. But the jovial atmospnere doesn't last long, with Twinsen uncovering a secret plot to destroy the planet. And, once again, it's up to him to sort it out. First, though, he'll need to recover his magic ball weapon (easily found), and his 'dress' and medallion (locked up, unfortunately, in a museum devoted to his heroism).

For the most part the game seems like more of the same, which is just what's called for. But there are some stunning new locations to explore (including an Egyptian-style desert, a temple, an excellent bar, a lava island and even the moon), loads of new characters to meet (like sausages with pneumatic drills and lawnmowers, giant spiders and bats), and some novel additions like a bit where you get to drive a car around a race course. There are tonnes of bugs in it at the moment, though (obviously), so we're going destroy our prototype version and play *LBA2* properly when Adeline have finished it.



● *LBA 2* is most likely to appear in September.

Duke Nukem Forever

Duke in bed with *Quake!*

3D Realms have licensed the lovely *Quake II* engine for *Duke Nukem Forever.*

By MARK DONALD

THIS IS THE NEWS THAT almost caused us to put this latest, scoop-packed issue on hold as it arrived on deadline day. *Quake* and *Duke Nukem*, the PC's foremost 3D action games, are tying the knot, and the fruit of this happy union will be *Duke's* sequel, ***Duke Nukem Forever.***

For many it has always seemed such a tragedy that we live in this divided world. On one side there is the innovative interactivity of *Duke Nukem*, and countering it are the breathtaking 3D effects only found in *Quake*. Those with vision dream of a time when all these elements can be united in one fantastic, universal game. A kind of Theory of Everything for 3D first-person-perspective games. 3D Realms' licensing of Id's *Quake II* engine makes this dream a stark, frothing reality.

3D Realms are, of course, working on their next generation *Prey* engine, but as *Prey* slips to late 1998, the need for a stop-gap is obvious. We were granted a furtive glance at *Prey* on a recent visit to Texas and it looks so good it should be worshipped as a god. It uses coloured lighting to phenomenal effect and pixellation has been eradicated almost as effectively as smallpox.

George Broussard, top-dog at 3D Realms, explains why *Duke* will not use this technology: "*Prey* will not work without the best 3D cards currently available. We don't believe there will be enough of these cards installed to support a high-end 3D hardware-only game until late 1998, when *Prey* will be released. Developing *Duke* with the *Prey* engine would mean releasing *Prey* and *Duke* at nearly the same time and both games would hurt each other under that scenario."

Avoiding this 'nightmare scenario' means releasing *Duke Forever* early in 1998. Therefore a ready-to-go engine was needed snappily and you could do worse than *Quake II*. GT, *Quake's* publishers, get the rights to *Duke* and a sequel mystifyingly titled *Duke Nukem 5*, while we get to see what 3D Realms, can do with a *Quake* engine incorporating 3D card support, coloured lights, and native Internet support. A Quakeworld-style server has already been promised. So hardcore *Duke* and *Quake* fans will be reconciled at last.

● We intend to secure a privileged first look at *Duke Nukem Forever* at the E3 show to be held in Atlanta in June.

Heavy Gear on display

Will 1997 be the year of the robot? Pretending to be a 50-ft tin man with a plasma cannon instead of a wood chopper may well become all the rage as Sierra's *EarthSiege 3*, MicroProse's *MechWarrior 3* and Activision's *Heavy Gear* are all due before the year's end. *Heavy Gear* is potentially the largest of them all, for despite suffering from licence anonymity (in the UK), we would trust the makers of *MechWarrior 2: Mercenaries* to know what they're doing on the 'bot front. The early progress suggests our trust is well placed.

Q. Can you spot the cleverly camouflaged giant robot?
A. He's the third tree on the left. We think.

The 'Gears', as they're known, are far less substantial than the traditional Mech, resembling more the metal romper suits of *Terra Nova* than alloyed out-houses on legs. Therefore your exo-skeleton will be a more flexible machine capable of a wider range of combat manoeuvres. For instance, you can activate special rollers – shades of Inspector Gadget – to speed skate around flat, open terrain.

The engine is a souped-up version of *MechWarrior 2's* and will be optimised to wring every last frame from your labouring PC. The demands will be great with 3D sound and 16-bit colour to deal with, but accelerator cards will be the law by then anyway. The new terrain generator does look flash, though, creating naturally undulating worlds rather than just dishing up a flat plane with a few triangles plonked on top. We'll be taking a deeper look at *Heavy Gear* soon.

● *Heavy Gear* will be going down at the end of the year, and a RPG and real-time strategy game set in the same universe are also planned.

TWILIGHT FANTASIES

E-On are about to kick-start on-line gaming with the launch of *Twilight Lands*, a multi-player, role-playing game in the style of *Meridian 59*. The company launched last year but has been a bit quiet since. This is the first of four new games that will hopefully get them back on track. Offering exclusive games at only £5 a month, E-On deserve a break. For details try: `http://www.e-on.com`.

THEY'RE BACK!

Not content with messing up our PCs three times with the various incarnations of DirectX, Microsoft are about to launch version five, suspiciously avoiding part four. The launch will take place in Paris, to which we expect to be invited. The purpose of the event is to demonstrate that: "DirectX is THE platform on which to develop excellent PC games." Smart. Or is it?

HOOPLA

Due out is *Slam 'n' Jam* from BMG. Yes, it's a basketball game. But there's money and influence behind this one, as tall blokes Magic Johnson and Kareem Abdul-Jabbar (played himself as a pilot in Airplane! you know) have happily put their names to it.

THE LATEST ON...

RED BARON 2

Like David Niven indulging in a little nocturnal cat-burglary, the Red Baron takes caddish charm to new heights in his latest outing.

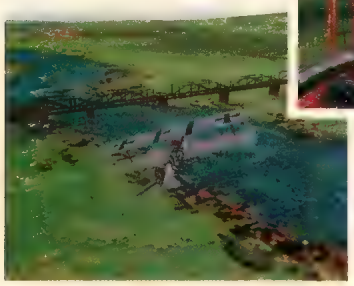
IT'S BEEN OVER SEVEN years now since the dastardly Baron's last appearance when "Bandits at six o'clock!" were the words on everyone's stiff upper lips. News reaches us, though, that Sierra are getting closer by the day to completing the sequel – the imaginatively titled *Red Baron II*.

The original received a respectable 76% in PCG 19, but has since been eclipsed by that spiffing dogfighter *Flying Corps*, which currently lays claim as the PC's best retro flight combat game.

In a day's test-piloting the game now looks fantastic. Beautifully detailed landscapes with over 30 polygon structures bolted to it such as factories, bunkers and bridges roll beneath you. Trains and tanks go about their daily business and the sky is filled with a far larger number of German and Allied planes than you saw in *Flying Corps*. The game occurs in simulated real time, and the engine is suitably detailed to reflect changes in conditions as the sun crosses the sky and casts shadows on the ground. All the expected effects are now finalised – lens flare, cloud haze and a wide variety of pretty, puffy explosions as your bombs drop.

Red Baron will be able to be played in a number of ways. Single missions can be picked from the large campaigns, or for a bit of head-to head action you can opt to take part in a duel with the top ace of the day. Thankfully, though, you're not limited to playing the goodies or made to complete specific goals in a predetermined order. Therefore, flying alongside the Baron himself choosing to run a bombing raid on an Allied bunker or simply dogfighting to your hearts content are all possible

● Wax your moustaches and starch your scarves in preparation. *Red Baron II* is due to be released by Sierra in September



(Above) The cockpits are all beautifully detailed, although the game can be played from a variety of viewpoints.
(Left) Fly under bridges, or just bomb them if you like.

PC WORLD Charts

THE OFFICIAL PC GAMER TOP TWENTY

In conjunction with PC WORLD, the UK's leading PC retailer

X-Wing vs TIE Fighter at No 1. Oh, now there's a shock. Yet how long will its rest at the summit of PC popularity last? It depends on how many it convinces to buy a modem and put their Internet server on their friends and family list. Incidentally, we're intrigued by the no-show of *Carmageddon*. A show of strength from the moral majority?

Ⓝ Up Ⓓ Down ● Non-mover Ⓝ New entry Ⓡ Re-entry

Top 20 CD-ROM

1	Ⓝ	X-Wing vs TIE Fighter	LucasArts
2	Ⓤ	Theme Hospital	Bullfrog
3	Ⓓ	Die Hard Trilogy	Electronic Arts
4	Ⓓ	MDK	Interplay
5	●	Extreme Velocity	Ocean
6	Ⓤ	Red Alert	Virgin
7	Ⓤ	C&C: Counterstrike	Virgin
8	Ⓓ	Flight Simulator v6	Microsoft
9	Ⓤ	Championship Manager 2 European Leagues	Eidos
10	Ⓡ	Duke Nukem Atomic Edition	Eidos
11	●	Star Trek Generations	MicroProse
12	Ⓓ	Need For Speed 2	Electronic Arts
13	Ⓤ	FIFA 97	Electronic Arts
14	Ⓤ	Comanche 3	Novalogic
15	Ⓤ	Theme Park	EA Classics
16	Ⓓ	Rally Championship	Europress
17	Ⓤ	Quake	GT
18	Ⓓ	Total Insanity Pack	Europress
19	Ⓤ	Grand Prix 2	MicroProse
20	Ⓓ	Screamer 2	Virgin

Frustrated PC owners are stomping their feet and gnashing their teeth for *Dungeon Keeper, Jedi Knights* and *FIFA Soccer Manager*.

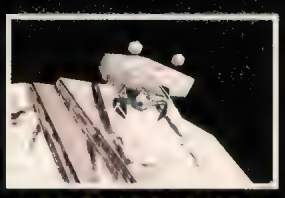
Your most wanted

As ordinarily, mild mannered gamers attack each other like savage animals for copies of *X-Wing vs TIE Fighter*, the Your Most Wanted chart is a model of good order. Everyone else has calmly shuffled up to fill the gap and virtually no-one has slipped in your affections. Developers may torment us with their hollow release dates, but we love them anyway.

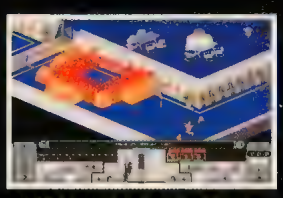
Although the 4.5% desperate for *Tomb Raider II* are in for a long and lonely wait, may we advise Sarly Adre Sarkum of Liverpool to refrain from purchasing *Ultima 9* as we will be providing him with a copy, eventually. Although we wouldn't advise getting too excited until after Christmas.

Your vital votes must be sent to: My Most Wanted, PC GAMER, Future Publishing, 30 Monmouth Street, Bath, BA1 2BW.

Pos.		Game wanted	Vote share	Pos.		Game wanted	Vote share
1	Ⓝ	Jedi Knight	21.5%	6	Ⓝ	Starcraft	8%
2	Ⓝ	Dungeon Keeper	18%	7	Ⓓ	Dark Reign	7%
3	Ⓝ	C&C: Tiberium Sun	12.5%	8	Ⓡ	Monkey Island 3	6.5%
4	●	X-COM: Apocalypse	10%	9	Ⓝ	Tomb Raider 2	4.5%
5	Ⓓ	Unreal	8.5%	10	●	Quake 2	3.5%



X-Wing vs TIE Fighter. Straight in at No. 1



X-COM stubbornly refuses to move.

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Ion Storm

Blasting to the top

The name may currently be unfamiliar, but soon Ion Storm will take on the most talked about developer crown. Why? Because one of their founding members is John Romero, the man who designed *Doom* and *Quake*. **By MATTHEW PIERCE**

SPECIAL REPORT

ROMERO AND HIS FELLOW Ion Storm members are seated at a long table in an obscenely plush hotel in London. They're deliriously happy – a condition they put down to the sapping effects of jet lag... although the fact that they've been paid a grotesque amount of money – £14 million for three games to allow Eidos to publish their games must contribute somewhat.

So, I asked the company's 29-year-old co-founder, chairman, owner and project leader, Romero, why leave Id – the place where he designed and produced some of the most important PC games ever (*Wolfenstein 3D, Doom, Doom II* and *Quake*).

"I wanted to concentrate on design," he begins. "Back at Id it was a case of design by committee. At Ion Storm there's one designer at the head of each game. Plus, because we're using finished [Quake] technology we know exactly what's possible – resulting in a lot less arguments about what we can and can't do."

The rest of the group, including designers Tom Hall (previously of 3D Realms) and Todd Porter (from 7th Level), all make noises of assent. Hall in particular is very vocal about the benefits of setting up on their own.

"Our motto is 'design is law'," he says. "It's really what the heart of the company is. Myself, James and Todd each has a vision of what the finished game will be and that vision will carry through no matter how quirky it may be."

Quirky sounds exactly right. When prompted about his new game, Romero, impossibly enthusiastic, talks at an incredible rate. "Mine's called ***Daikatana***. It's not what *Quake* should've been, because *Quake* wasn't intended to be a really big content game. *Daikatana* is, though, and it'll be an awesome single-player game. Amazing. It'll even be a better multi-player game than *Quake*."

Daikatana will use the *Quake* engine again, although modified slightly to allow for effects such as translucent objects. The somewhat obscure title refers to both the player's sacred samurai sword and a time-travel (and plot) device that has the gamer indulging in both medieval and futuristic warfare in a similar twisted imagination as seen in Adeline's *Time Commando*.

Romero promises *Daikatana* will contain more role-playing elements than

John Romero reminds us why Americans aren't best known for their fashion sense. Or their conservative hair cuts.
An Addiction Named John Romero

(Left and above) The competition. *Hexen II*, still in production at Id, is using the Quake engine, while *Duke Nukem Forever* will use the Quake II engine.

Quake and an environment featuring more variables, choices and outcomes for the player. "It's still going to be action-packed though," he stresses. Quiz him about monsters and weapons, and he really puts on the theatrics. "*Quake* had 23 monsters." He pauses for dramatic effect. "*Daikatana's* got 64!"

"*Quake* had 9 weapons - *Daikatana's* got 26!" he shouts triumphantly.

It's impossible not to be caught up in his almost childish excitement. Even though he readily admits it's still at the planning stages, and only 25% will be finished by August for E3, you can't help but believe him when he says it's going to be something very special.

The mention of *Quake* has the more reserved Hall becoming talkative. It appears he was a little disappointed by the finished result: "The problem with *Quake* was that all you got after the shareware version were more levels. No new music, or graphics, just levels. It wasn't strong enough to hold your attention – a lot of people haven't finished the registered version because it wasn't compelling enough. When *Doom* first appeared, more levels were enough for people to get through the whole game, but now it's not. You need more content."

Hall describes his game, ***Anachronox***, as a fantasy role-player "analogous to Japanese RPGs such as *Chrono Trigger* and *Final Fantasy III*" but again using the Quake engine. "It's the first game that will really use a 3D movable camera in a dramatic sense," he says. "Talk to one of the many characters and the camera will swoop in like a movie. If you cast a fireball spell, the camera will swoop in behind the fireball to follow it. The *Quake* engine has so much power and it's been so minimally used so far."

The third game from the company, being designed by Todd Porter, is still untitled but is currently going under the name ***Remora***. Either very little is known about this one or Ion Storm aren't talking – mainly because it's enigmatically described by Porter as a unique real-time 3D strategy game where you play a mollusc-like creature which takes over aliens!

With only three brief outlines of games (including one where you play a mollusc-like creature which takes over aliens) and some sketchy artwork could Eidos' multi million pound investment in Ion Storm be described as a slight gamble? The team laugh. Loudly.

Bob Wright, Ion Storm's COO and director, eventually decides to answer. "We have a very organised design rule. We're extremely thorough with all the design documents. We have marketing sections, story sections, character sections and make sure all the details are on paper for all departments. We think of the game we want to make then reduce it down to every single component that needs to be created by everyone in the company." Listening to Wright and the others, it all sounds deceptively simple. It's obvious the Ion Storm hype-machine's firmly up and running. Let's just hope the end results are as fun as the ride. PCG

Almost a year after its release, *Quake's* long-term appeal is still evident. New add-ons include the forthcoming *Quake Rally* (above) and the chess variant *Quess* (right).

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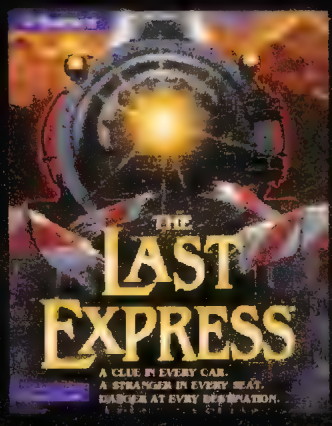
CGW - *4 stars, May '97*

Computer Life - *4/5 stars, May '97*

PC Review - *8/10, May '97*

A CLUE IN EVERY CAR. A STRANGER IN EVERY SEAT. DANGER AT EVERY DESTINATION.



Less hum

an tha[human

It's always cited as the Holy Grail of games development. It's the one area that all programmers say they are pushing to the limits. But why is Artificial Intelligence – teaching machines to behave like humans – for the most part years behind the rest of the PC's technological advances?

By STEVE BOXER

ARTIFICIAL INTELLIGENCE IS, OR at least sounds like it ought to be, one of the most glamorous technologies. Mainly because of its name, it conjures up involuntary images of computers that can think and learn, which depending on your point of view (and how many sci-fi novels and films you have read and watched) may strike you as fascinating, sinister or improbable. Ironically, though, Artificial Intelligence, or AI for short, has recently become what the Americans call a "No-brainer". After some years in the wilderness – caused by the realisation in academic circles that years of AI research had not really brought the prospect of a thinking computer any nearer to reality – it has returned with a vengeance in the world of computer games. No modern game, from the most Neanderthal blaster to the most intricate sim, is complete without some element of AI, however rudimentary. Yet the technology is still a mystery to gamers – and to some extent even to those who program it into games.

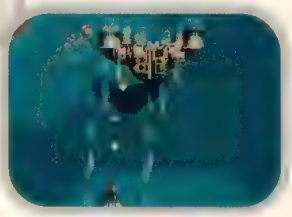
What is it?

In the interests of rigour, it would make sense to define AI. Unfortunately, this isn't as straightforward as you would think. In academic circles, something called the Turing Test, dreamed up by computing pioneer Alan Turing, is generally held to define AI more closely than anything else. The Turing Test is a simple concept: imagine a human having a conversation via a teletype machine (the test was conceived in the days when computers were powered by valves). If the human can't tell whether he or she is talking to a computer or a human, then that computer can be said to be truly intelligent, and therefore an AI system.

Such a system, of course, does not yet exist, even in this age of mind-bending processor power. But this definition appears to be increasingly relevant to computer games, as AI is often used in an attempt to create computer players which act like human ones. However, RPG and sim game pioneer Peter Molyneux, one of the first people to try to shoe-horn some measure of 'real' AI into his game *Populous*, offers a much better, practical definition: "AI is a way of getting computers to do things which *look like* they are intelligent." More a case of 'Apparent' than 'Artificial' Intelligence.

AI tastes

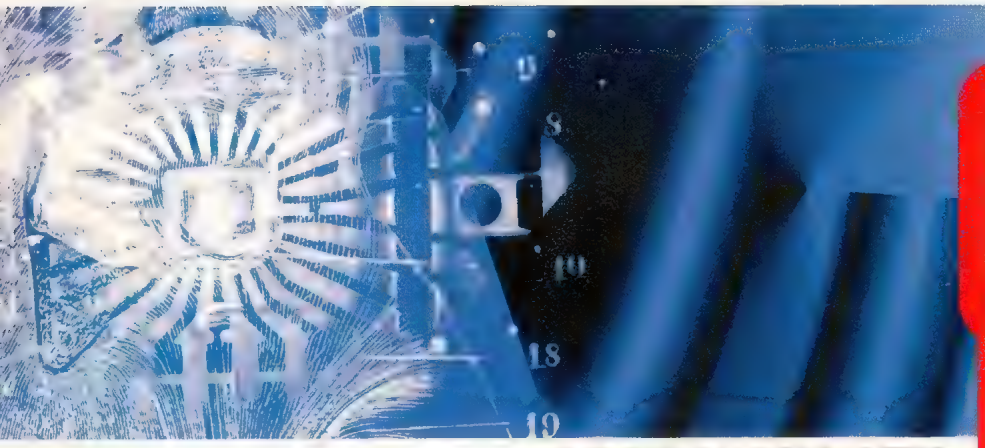
Adopting the above definition of AI, it would seem obvious that different types of games will require different things from AI. This is indeed the case. In sports games, the AI must operate in real-time, and its emphasis should be on giving computer players a level of adaptability, without making them act in an unrealistic manner. In shoot-'em-ups, on the other hand, all that the AI really has to provide is a basic level of unpredictability which keeps the player from encountering the same monsters at the same places every time they play the game. Not that this is something you often find in shooters. In sim games, strategy games and RPGs, AI is used – to varying degrees – to create computer opponents which act as though they were human opponents, as well as to bring a semblance of human behaviour into the computer-generated worlds in which they take place. AI has found its way into these sort of games more extensively because, often, the computer has a bit more time to spend considering its moves than in all-out action games.



***NASCAR 2's* AI requires a great deal more real-time adjustment than that of a shoot-'em-up like *Raptor*.**

This, more than anything, has fuelled ☛

"AI was a dirty word five years ago. Now it's becoming more important. The way games play is becoming more focused around AI as the games become more creative visually."
Peter Molyneux



AI's return from the doldrums. Peter Molyneux again: "AI was a dirty word five years ago. Now it's becoming more and more important. The way games play is becoming more and more focused around AI as the games become more creative visually. We can create a city in a game which looks like Manchester, but we need to put things in there." And that's where AI comes in. Computer Artworks' William Latham, embarking on his first game project, a sim tentatively entitled *Evolva*, endorses this view: "There's a change in the games world, now that it's going 3D. But even in *Super Mario 64*, you often find big, empty spaces in which nothing is happening; I think the 3D world is bigger than everyone expected. AI and Artificial Life techniques help make that 3D space more interesting."

This, of course, is easier said than done, as Peter Molyneux describes: "With *Dungeon Keeper*, we're finishing work on the computer player. It's an absolute nightmare for AI, because the environment can change at any time. The creatures must interact with you as if they had their own personalities. They must have curiosity, fear, sight, the ability to remember things about their environment and so on." The difficulty of AI is pulling all these variables into a system which actually works and has no holes in it which could be exploited by human players. Most developers try to get round this by exhaustive game-testing and tweaking – one suspects that AI games' development schedules have a higher percentage of their duration set aside for game-testing than non-AI games, so if an AI-equipped game's release slips, holes in the AI are likely to be a major contributor to the cause.

How to cheat at AI

Because of the complexity of AI systems, it is universally acknowledged that most of the AI is found in games cheats, by pretending to be AI yet lacking the sort of rigour found in academic AI systems. All programmers agree that true AI requires vast processing power. As a result, games developers often put pseudo-AI in their games, which gives the appearance of Artificial Intelligence, but is hard-wired in typical computer fashion; that is, any input to the pseudo-AI, rather than being composed of a complex series of variables, is actually discrete, and generates a discrete response.

Rob Fulop of PF:Magic, developer of the popular *Dogz* and *Catz* virtual pet games, explains: "I tend to think it's all cheating. Although what we're doing is increasingly sophisticated, we just use very large data tables and I don't think what we're doing is real AI."

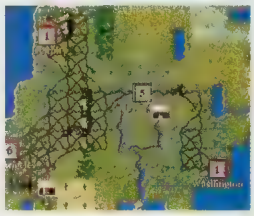
Such pseudo-AI can give the impression of a system which learns and responds to user input, but is not capable of unpredictable behaviour. Still, it is often enough to provide the sort of low-level appearance of AI that games developers are seeking.

Games vs academia

Considering that the average computer game is about as cerebral as picking your nose, it is surprising that any link between the worlds of games and academia exists at all. But it does,

Think you're clever... Civilization

Picture the scene. The year is 2010, you're ensconced behind batteries of anti-tank defences, surrounded in your palace by your élite terror troops equipped with the latest long-range tactical nukes and... and... a catapult rolls up. Terror strokes your short and curlies because this is *Civilization* – arguably the best game ever but still one where triremes sink battleships and catapults are a devastating force in the 21st century. Games are escape and fantasy, but how far should cheating in AI be taken?



and that link is AI. Following Turing's theoretical musings, university research departments started to take an interest in AI and, particularly in the 1970s, it was a very voguish subject for academic research.

AI techniques have emerged from university labs and found their way into, among other things, missile guidance systems, robotics and software which predicts credit card spending patterns, all of which are areas where machines need to display some form of intelligence. But there is a yawning void between the sort of AI forming the basis of academic research and the sort of AI you find in computer games.

It's fair to say that today all games cheat – at least as far as AI is concerned. If they actually contained proper, academic AI, they'd run mind-numbingly slowly – perhaps even as slowly as a Looking Glass game on a 486. Also, the problem with developing AI is that it generally requires a fresh start for each project. Programming graphics into a game, you can buy graphics generation books with lists of routines to generate 3D shapes which you can simply slot in and off they go. But with AI, there's nothing there – you virtually have to invent the wheel every time. In games, you'll find something *like* neural networks, but still crucially removed for the sake of speed.

Alan Turing can be considered the father of AI. His machine intelligence has still not been surpassed today.

Mark Atkinson, William Latham's partner at Computer Artworks, has an academic AI background. He is scathing about most of the AI he sees in modern games which, he says, takes a "top-down" approach; that is, consists of an enormous set of rules governing how all the variables in a game (such as, for example, fear, sight and memory in *Dungeon Keeper*) relate to each other. He says: "It's the best way to write a simple AI, for something like draughts, say. But when people try to scale it up and up and up, the complexity ramps up exponentially so that if you put another rule in, it breaks an existing one. That's why in something like *Command & Conquer*, you can always find something that the computer can't cope with, like sandbagging your base. That sort of rules-based Artificial Intelligence isn't used in research any more, apart from in things like language processing."

Computer Artworks, via their Organic Art screensaver (which, Latham says, "We did as a stepping stone towards our first game title") are renowned for their Artificial Life technology, which draws on genetic modelling to create a computer-based system that can, theoretically act in an organic way. Latham says that the company will add this sort of element to the AI in *Evolva* in order to give it "a certain ☛

Emergent behaviour

When you talk to people about AI systems, the phrase 'emergent behaviour' is bound to crop up sooner or later. It is something which can be seen in real life, where a group of organisms act as a single mass: stampeding cattle, for example, are exhibiting emergent behaviour.

Emergent behaviour can almost be taken as a sign that a game's AI is working properly. Mark Atkinson views it as a desirable thing to find in a game: "The idea of emergent behaviour – the classic example of which is flocking behaviour – is the sort of thing we're trying to create in our system." Robin Green is excited about having witnessed emergent behaviour in *FIFA Soccer Manager:* "Where, for example, an entire team is composed of forwards, that can be called emergent behaviour. We didn't program this sort of thing in, but we just gave the players roles, and because we constrained the players' actions, in certain roles, certain things don't get done. For example, when all the team members are playing as forwards, no tackles are made in certain parts of the pitch, and the AI exploits this."

"*Dungeon Keeper* is an absolute nightmare for AI, because the environment can change at any time, and the creatures must interact with you as if they had their own personalities."
Peter Molyneux

Artificial Life

Having pretty much given up hope of ever being able to create an adequate working simulation of the human brain in computer software, attention has recently turned to Artificial Life. This is a process which attempts to model not just the workings of the brain but also the workings of organic life processes in computer software.

Pioneers in the field include William Latham, who has spent several years perfecting genetic algorithms which model organic breeding and mutation, and Cambridge-based developer Millennium, who developed the intriguing *Creatures*, a sim game that enables you to breed, train and simply keep alive a strange breed of rather cuddly creatures.

***Creatures* never really fulfilled the promise of its sophisticated engine, thanks partly to being dull to play and partly to the fact that its publisher, Warner Interactive, disappeared into a black hole. However, the one thing that Artificial Life technology does bring to games is an element of unpredictability and, more importantly, adaptability beyond all but the most complex AI systems.**

Millennium have been trying to get their technology embedded into things as diverse as Formula One driver simulators and intelligent traffic light systems, but their main focus is on games, and they have had trouble getting their complex ideas across to companies which could, conceivably, benefit from their technology. Artificial Life is receiving much attention in the academic world, however, thanks to projects such as Tierra, which is an attempt to see whether artificial organisms (which are basically emasculated computer viruses), can survive in the 'wild' on the Internet.

Football games should exhibit some of the best AI, but few do. *FIFA Soccer Manager* may herald a change.

unpredictability such as you would encounter with an animal in the wild". Thereby, Latham argues, the problem of blind spots in the AI which afflict things like C&C could be avoided. This is one of the dreams of AI and many companies will closely watch Computer Artworks to see if it actually delivers.

A fresh look

Atkinson, having rubbished the top-down approach to AI programming, is keen to explain his own bottom-up approach: "It's best to make simple components which know how to do simple things and then plug them together. It's like in robotics, when people started modelling little insects. They'd create a simple algorithm for the movement of each leg, for example, then stick them all together. In a game format, you could encode individual behavioural patterns, one saying 'Run away' and one saying 'Attack'. Whichever urge is the strongest wins. Our stuff is based around those sorts of ideas."

This approach seems to be receiving widespread adoption. Electronic Arts' *FIFA Soccer Manager* proves to be an unlikely case in point according to Robin Green, a technical specialist at EA responsible for the game's AI programming. Green starts off by providing a rare insight into the sort of brief an AI specialist at a game developer is likely to receive: "I was told that we need AI and you're going to program it. Here are the players' stats – movement, skills, coolness and so on – a total of 26 things. From these variables, you have to make a game of football we can mess with.

"We started by making the teams play incredibly boring football, where all players had 100 per cent of all attributes, where every pass works and every shot is a goal. That's how we got the positioning perfect. Then we had to add crapness in very specific ways, for example if a player has high running stats, he's going to have correspondingly low awareness stats. Balancing the degrees of crapness is how you write the AI for a sports game.

"When we started doing the AI, the players could only run around; there were no animations for passing and so on. Then we made them run at different speeds according to their stats, then we made them pass more or less accurately, and things started to get interesting. In *FIFA Soccer Manager*, the football itself has an incredible amount of knowledge of what it's doing. If a player misses it, it says 'I'm a free ball' and the three closest players run towards it." Green freely admits that programming the AI for *FIFA Soccer Manager* was a monumental task which frequently encountered problems, but he reckons EA have now got it right and offers this evidence: "The goalie was one of the last things done because it is one of the hardest things to program. I was leaving games running overnight, and the opposition AI was

"If a player has high running stats [in *FIFA Soccer Manager*], he's going to have low awareness stats. Balancing the degrees of crapness is how you write the AI for a sports game."
Robin Green

Digital Animations' AI masterplan is being spearheaded by Jim Robertson (left). Their forthcoming game, *Steel Legions*, is using a ground up approach that will hopefully push real-time AI forward later this year.

exploiting the lack of a goalie ridiculously. The testers love the game. People have been reading more into what they've been seeing than is in the program, and we like that."

Whither AI?

Now that multi-player and on-line gaming has taken off with a bang and is becoming ever more sophisticated and imaginative (co-operative playing options, for example, are becoming essential for any modern game worth its salt), you can only see AI taking on an increasingly important role in computer games. As long as games allow one or more human players to play against computer opponents, they will require some form of AI. And as the games become more complex, so the AI will have to become more sophisticated.

Game AI will have achieved a new level of sophistication when it allows developers to do away with their games' easy, medium and hard settings. Peter Molyneux says: "You'll see much more learning; game AI will learn and adjust play accordingly so that you don't need play settings." Mark Atkinson says: "This sort of thing can be done in classic AI, but it's a real hack. With our behavioural approach, it's very natural to slip in some adaptability. For example, if, as a player, you do something in a game, the next time you try it, it may change the weightings a little, so that what you try maybe works only once or twice. And because the program reacts to what the player is

Think you're clever.. Formula One

Looks great, plays exceptionally well, and accurately recreates 17 tracks from the 1995 Grand Prix season. A positive way to sum up this latest Formula One take. On the other hand, though, if you decide to play the game fairly, that is, to actually overtake your opponents using accepted rules – out-breaking or using their slipstream – you'd better get all the way past. Fail, and the computer cars shut the door just a little too late, i.e. when your foot, leg, beer belly and head have got through, but your arse hasn't. Even more annoyingly, they carry on

unharmed and you spin off the track. Grrrr!

Neural nets

Neural networks are simply attempts to model the way the human brain works in computer software. As long ago as 1943, two American scientists noted that the physical mechanism which works in the human brain – where neurons, connected in a huge network to other neurons, receive an input signal and, depending on the signal, pass it on or transmit nothing to the next neuron in their particular chain – could be modelled in terms of mathematical logic.

As you can no doubt appreciate, rigorous descriptions of neural nets as laid out above aren't really very helpful – the concept of neural nets is very difficult to articulate in understandable English. Basically, though, all they are is a computerised model of the brain's workings.

When the first neural nets were created, it was found that they were very good at recognising complex patterns. This, of course, is how the brain recognises things like letters, visual input and sounds. It was also found that, in order for them to be able to recognise patterns, they had to be trained, so that the complex output from them equals the complex input.

This ability to recognise complex data is what sets neural nets apart from the ordinary processes you find within computers, in which one discrete input (such as a processor command) generates one discrete output, and where the computer's power derives from the ability to process as many such commands as possible as quickly as possible. Because neural nets can be trained they can also, to some extent, learn and adapt, and this, along with their ability to make sense of complex data made up of a number of variables, is why they often form an important part of the AI in games. Slotting them into games in a meaningful manner is not easy, however, and the unimaginable computing power required has ensured that neural-net models of the brain are beyond current capabilities. If you bear in mind that the brain contains about 100 billion cells, and several times as many synapses, and that each neuron is connected to between 1,000 and 100,000 others and that it is believed that the smallest functional unit in the brain is a column of 4,000 neurons, you can see why proper human-style thinking computers haven't yet been made. Mind-blowing stuff...

doing, not only does it get better if you suss it, it gets worse if you're not very good."

Steel Legions, a strategy game developed by Strathclyde-based Digital Animations due to be published by Eidos this September (presuming the lengthy delays which have taken it well past its original launch date do not crop up once more) contains an AI system which could offer a glimpse of the future.

Again, the man behind *Steel Legions'* AI, Jim Robertson, has an AI research background: he worked on AI-equipped weapons systems at the nearby National Engineering Laboratory. For obvious reasons, Robertson has always tried to avoid blind spots in his AI: "If you haven't programmed a rule for a problem, the system won't recognise that problem as a problem – that's when you get blind spots. We've taken a modular approach using AI agents which can think for themselves, and combined them to get the game AI. In *Steel Legions*, where two sides are having a battle, each side is split up in the correct military fashion. In the game, each one of these military positions is occupied by an AI agent. There's one AI, but different characteristics are fed into it for each character, so that each character sees different things in a game and acts differently."

So where do games players come in? They enter the battle as a guest, and choose a character. That character is taken out and you enter in its place. Where the AI was taking the decisions, you take them instead. This approach gives the sort of multi-player gameplay flexibility beyond the wildest dreams of most games developers, let alone gamers. As Robertson explains: "You can have a game with 18 characters, of which two people are human, playing together or against each other and the rest are AI. The probable maximum number of people you could have playing the game is about 120. If you move an individual playing a game to a networked game, you don't have to physically change that game. If you've got an ongoing game, say, and a load of the players have to go back to work, you can slot the AI characters back in their place. And you don't have to have a game which varies according to the number of people playing it on a network. If nobody wants to play a character at the bottom of the tree among the bad guys, you can just leave that to the AI."

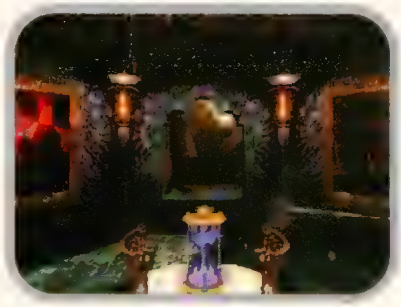
Ubi Soft's driving game *Pod* stood out due to its ability to let you play a single game via both modem and network, and Digital Animations' AI approach should take this idea to a higher plane (presuming *Steel Legions* delivers what it promises – it seems that it is in the major tweaking stage, to ensure that it competes with the likes of *Red Alert*, and has been there for some time). One suspects that games developers will take a close look at *Steel Legions*, as it will be the first game on the market to use the bottom-up AI approach described by Mark Atkinson, and the benefits of this approach should be plainly visible (that's hopefully assuming it doesn't get stuck into the pipe-dream failures category that so many other promised systems have ended up in).

Think you're clever... UEFA

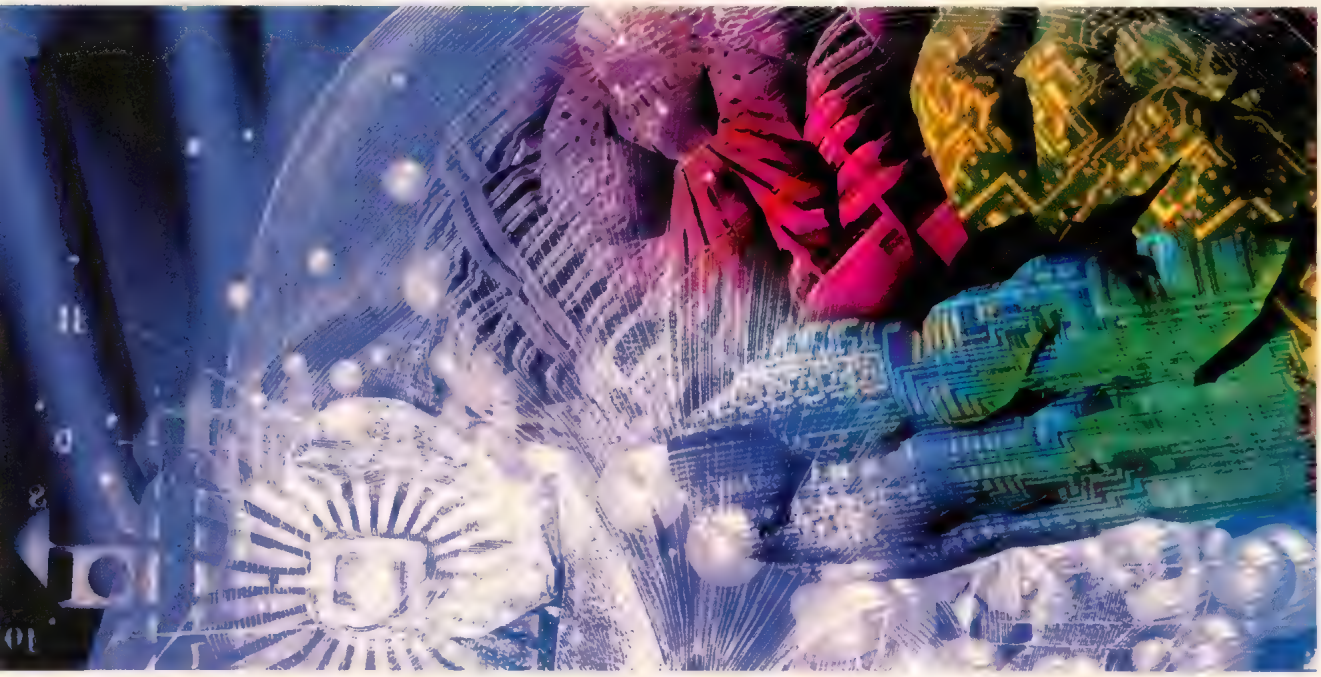
Most football games have notoriously bad computer AI, and *UEFA Champions League* is no exception. Confusing the opposition in this game boils down to running at them with the ball. God knows why, but by picking up the ball in your own goalmouth and sprinting towards theirs (a not uncommon tactic in football), the entire opposition tend to stand around watching you as if it's the last thing they expected. Running the whole length of the pitch before scoring is not only possible, but is usually the most advisable tactic. Even the goalie puts up little resistance, as if he hadn't considered the sheer audacity and wasn't warned of this eventuality in the pre-match team talk.

Speak your mind

The original version of *Zork* created a commotion when it appeared thanks to its rudimentary AI, which seemingly allowed you to interact with characters by typing in plain English phrases. Despite the excitement this generated, though, precious few games followed suit, and even nowadays, just about all point-and-click efforts require just that: pointing and clicking at selections of stock phrases, rather than typing in your own, coherent phrases.



The *Zork* series is well into its second decade. Its reputation is built on the original's speech system.



Speech processing, in which PCs attempt to make sense of colloquial phrases, is nothing more than a form of AI and it's starting to appear in ordinary software, such as Microsoft's Office 97. However, it is still rather crude, even when confined to a limited context. But it is the sort of AI which can be bolted onto an otherwise finished game, particularly if that game is a Windows 95 one, as Windows 95, through its well designed API and DLL systems, allows easy addition of such specific engines.

We have also been promised different types of speech recognition engines – similarly designed just to slot into Windows 95 – for some years. But as yet, these have failed to materialise. Unfortunately, system-level programming efforts like these tend to be completely overlooked by games companies, as they strive to make their games ever better looking. Theoretically, though, it should not be too difficult for a point-and-click game developer, say, to license an off-the-shelf speech recognition engine with a limited vocabulary and allow you to use this as the main means of navigation. There are vague signs that games using these sorts of techniques may be just over the horizon.

Abe's Odyssee, for example, a PC/PlayStation platform-style shooter currently being developed by newcomer Oddworld for GT Interactive, uses AI to give its playing style an extra element of strategy – the character you control must use a selection of phrases such as "Hello", "Follow me" and "OK" and noises (triggered, on the PlayStation version by pressing various button combinations), as well as sneak modes, in order to negotiate certain segments of the game. The overall effect is a game which stands out from the pack thanks to slightly more challenging gameplay than most, but this idea, as long as developers find the necessary bravery, could be taken much, much further.

The poor relation

Despite the massive potential rewards of designing innovative game AI, what is arguably the most important facet of a game – how the enemy reacts to your actions – remains low down on most developers' agendas. The main reason for this is that it is an extremely difficult subject to get your head around, and developers also run the risk of spending much time and effort on adding it to their games and then finding that it doesn't do what they wanted it to. It's the sort of thing you'd expect games developers to look towards as they attempt to differentiate their games in an increasingly homogeneous market. Yet, generally, it remains a low-priority technology which is shoe-horned into games late in their development cycles, if at all.

You would imagine that, with ever-increasing processing power available to PC game developers, those developers would take advantage of this to push forwards the boundaries of their AI systems – there is no doubt that AI requires a large amount of processing power. But this just doesn't happen.

Peter Molyneux explains why: "You haven't got much processing power in games for the AI, really. 75 per cent of games these days are spent driving the screen, and about 20 per cent of the processing goes on keeping the game going. That leaves about 5 per cent for the AI. I don't think there will ever be enough processing power for rigorous AI." It's a depressing philosophy. Over the coming years, technological advances and a longer term approach to developing this most vital of areas will hopefully prove him wrong. After all, if games are truly to offer humans a real challenge, we need more than is on offer at the moment. Unfortunately, developing radical, quality AI is vastly expensive and time consuming, and as multi-player games slowly infringe on the rights of the lone player, the incentive to bother at all may become lower than ever.

However, there is some hope. If the forthcoming crop of games using so-called bottom-up AI succeed, then you can expect it to receive the attention it deserves. Graphics may be beautiful, but surprises are better – and it is on delivering the unexpected that the industry must focus. Artificial Intelligence will be just that for the foreseeable future, but artificial should not equate to inferior. PCG

Think you're clever... Warcraft II

Warcraft II **was a game oft praised for its cute and comical cartoon graphics. But its sense of humour did not end there. How endearing it was when you'd order your jolly little peasants into instant death, they'd answer with a chirpy "yes my lord", and then wander off in completely the wrong direction. The playful, wee chaps could never resist making a beeline for the nearest line of guard towers and a cannonball in the chops.**

And every assault always met the same fate. Enter some woods with a vast ogre horde, and come out the other side with a couple of peasants. Some time later, with your attack in ruins, you'd discover the rest of your army snagged on twigs, like a giant baggy cardigan.

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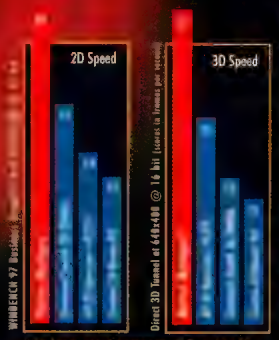

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Diary

The Curse of Monkey Island is going to be one of the biggest games of the year. In this, the first instalment of our development diary, Jonathan Ackley starts as he means to go on...

"We wanted to give our animators the tools to do film quality work. So we worked with our ink-and-paint lead to develop a method of getting hand-drawn, fully anti-aliased animations into the game."

IN AUGUST, 1995, LARRY AHERN AND I locked a troop of monkeys in a room full of typewriters. "Who better than monkeys," we thought, "to design the next instalment of LucasArts' popular *Monkey Island* series?" Three months later we removed the completed manuscript and determined that it was not only completely unusable but it was also more than a bit unsanitary. Dejected, Larry and I decided that we would have to design the darn thing ourselves. We worked on it from December of 1995 until late February of 1996. In March, I joined up with our crack team of programmers – Chuck Jordan, Chris Purvis, Livia Mackin and Aric Wilmunder – and we began to build the game itself.

We then turned our attention to the art production. The first step to improving the graphics quality was to upgrade our game engine to support high-resolution graphics (640 by 480), a huge improvement over the rectangular pixels of 320 by 200. When *Monkey's* lead background artist, Bill Tiller, who had done such a phenomenal job creating the low-res backgrounds on *The Dig*, showed us what he could do at a higher resolution, we were all completely blown away.

Our animation technology improved as well. Until recently, adventure game characters had to be drawn on the computer instead of paper. This technical limitation tended to make the characters blockier, smaller and less expressive than comparable animations you might see in an animated film. We wanted to give our animators, led by Marc Overney, the tools to do film quality work. So we worked with our ink-and-paint lead, Kim Balestreri, to develop a method of getting hand-drawn, fully anti-aliased animations into the game while still maintaining the level of interactivity found in previous LucasArts adventure games.

People always ask us what it's like to work at a place like LucasArts, on a project like *The Curse Of Monkey Island*. They're always surprised to find out that it's just a job like anyone else's. Like most people, we roller-blade to work then stop by the sound department for a quick game of indoor hockey and some NERF weapon target practice.

Then it's right to work, answering the same important questions you would associate with any other job. Dreary questions like: "Does the giant, man-eating crocodile need more teeth?", "Should the alien fire lasers, or friction-liquefied metal projectiles?" or "Could break into the North American Defense command with just my Web browser?"

Parts of my days are spent bug fixing... err. I'm sorry... I've just been reminded that we don't have bugs. We have 'undocumented features'.

Parts of my days are spent undocumented feature-fixing. It usually begins with a phone call from someone in the Quality Assurance Department. The call goes something like this:

"We've found a new bug."

"LYING PIG! I'LL TEAR OUT YOUR HEART!"

"No, really. It's in the love scene."

"Ah, yes. The love scene. So tender. So romantic. What seems to be the bug?"

"On slower machines, Elaine transforms into a troll and gnaws off Guybrush's head."

"My life is over..."

"What's that?"

"Um... Let's just mention it in the readme."

Of course, I do other tawdry tasks during the day. I peruse the art, listen to the voice actors telling their jokes, and recline while enjoying the music Michael Land has written for the game. I know, I know. It's a tough job, but...

● Jonathan Ackley is the co-project leader of *The Curse of Monkey Island*.

Larry Ahern and Jonathan Ackley (top-left) are the men responsible for Guybrush Threepwood's *Curse Of Monkey Island* adventures.

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A Different World

The key to controlling the Internet is captivating the US's on-line community. Our American correspondent, Gary Whitta, looks at how Microsoft are planning to do just that.

NOBODY THOUGHT IT WAS POSSIBLE, but it's happening. It's progressing so slowly you'd need a time-lapse camera to see it, but Microsoft *are* taking over the games business. When Bill Gates and his merry men marched into the entertainment sector just over a year ago, the reaction was more one of amusement than concern – particularly after Gates' interview in our sister magazine Next Generation, which gave the impression he didn't know quite as much about games as he does about the business world. The only games he mentioned in the entire conversation were old crusties like *Asteroids* and *Donkey Kong* after all. But then Microsoft's Games Division debuted with a not-bad-at-all opening line-up at last year's Electronic Entertainment Expo (E3) in Los Angeles *(Actually, bar* Monster Truck Madness, *I thought it was terrible. – Jim)* And one of those openers, the real-time WWII game *Close Combat*, was even named our Wargame Of The Year for 1996. Suddenly, people stopped grinning and started to pay attention...

"Microsoft shell out a whopping $425m for the technology behind WebTV, the innovative Internet box, no bigger than a satellite TV decoder which allows people to surf the Web and send and receive e-mail through their television sets."

through their television sets. The ability to gain access to the Internet without having to buy and learn a PC will undoubtedly cause a huge boom in Internet use, and Microsoft see this as a great way to start 'getting' on-line entertainment users in serious numbers. Combined with the recent beta release of Internet Explorer 4.0 (which has some amazing features and which you can expect to find bundled with all new PCs soon), Microsoft's slow-but-sure edging out of Netscape in the home Internet market is continuing. After all, their sole goal at the moment is to own the Internet.

Big move No. 3: Jaws dropped all over the US PC GAMER office when we heard this one – Microsoft's Internet Gaming Zone (the company's on-line gaming Web site) picks up all of LucasArts' on-line games for 1997. The new site at `www.rebelhq.com` launches with the cowboy shoot-'em-up *Outlaws*, and *X-Wing vs TIE Fighter, Rebellion* and *Jedi Knight* will all be on-line through this site by the end of the year. The rights to

Microsoft are courting industry giants like LucasArts to enhance their Web profile. 'Owning' it is a concern second to none for Gates.

But a year ago the story had only just begun. The last couple of months have seen a flurry of activity from Microsoft which firmly intends to put the company's indelible mark on the games scene and could, conceivably, see the company gaining a monopolistic stranglehold over the entertainment and home markets, just as Bill Gates has over the business software market today.

Big move No. 1: Microsoft host Gamestock 97, a huge editor's day event that – shock horror – editors actually went to! Shown behind closed doors was a serious amount of seriously good-looking software, including the much-enhanced *Close Combat 2* and two awesome games currently protected by NDAs (non-disclosure agreements). Those who saw them assure me they are going to be kicking some serious ass in their respective genres later in 1997.

Big move No. 2: Microsoft shell out a whopping $425m for the technology behind WebTV, the innovative Internet box, no bigger than a satellite TV decoder which allows people to surf the Web and send and receive e-mail broadcast these games may expand to the likes of TEN and Mplayer in the future, and they probably will, but for the moment Microsoft have scored a major coup in a deal where everyone's a winner – LucasArts get a powerful server for their on-line content at no cost, while Microsoft get a great way of attracting people to the IGZ, which is free now but probably won't be for much longer.

After these major moves, people are taking Microsoft's game initiative a helluva lot more seriously than they were a year ago. And this is only the beginning – the coming year promises even more acquisitions in technology and licences, not least in the continual, troublesome upgrading of the DirectX technology (v5.0 has just been released to developers) and in the on-line world. Bill Gates may not be able to thrash you at Deathmatch *Quake*, but when it comes to securing a foothold in the games business and building on it, he's the meanest new fragger on the block.

● Gary Whitta is editor-in chief of PC GAMER's US counterpart.

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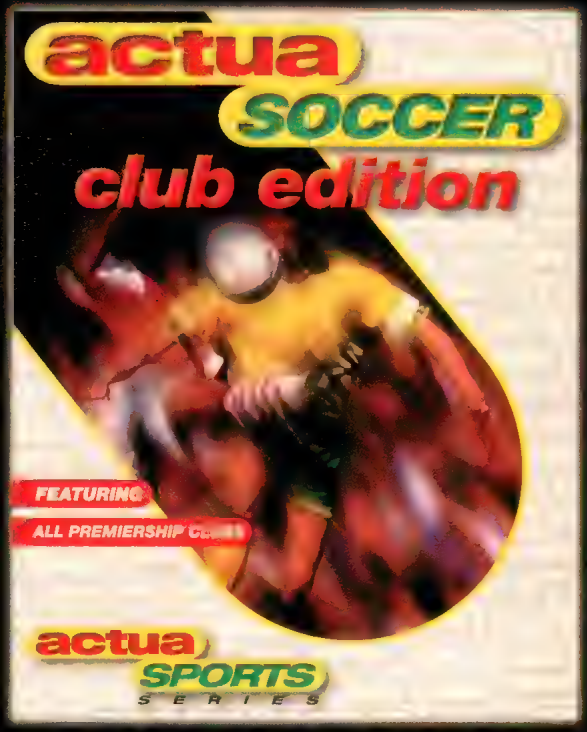

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So you want to... Part eight: Playtesting

Create a Computer Game

You think you've finished? You figure you're through? Your game is finally complete. Well, now's the time to find out for sure.

OF ALL THE WORDS IN THE ENGLISH language (apart from that old favourite 'elbow') the poetry and beauty of the term 'final code' are truly wonderful. They stir the hearts of publishers, accountants, retailers, journalists and even the gamer in the street. It's the sultry promise that you're actually going to get to play the game you've been hearing so much about... except you're going to have to wait just a little bit longer, because now's the time to weed out all those bugs. Best to get things sorted now rather than when you cut 55,000 CDs and then 55,000 patch discs, eh? Testing is simple in theory, hard in practice, but a lot less hard if you follow these handy hints.

The game really is finished isn't it?

Chances are, the programmer has scrawled 'Final' on the gold disc he's just sweatily placed in your hand because he wants you to like him. All those threats and promises you made trying to get the code monkey to finish the software have paid off... but he hasn't necessarily actually finished the code. To all the milestones, betas, alphas and builds that have plagued your life over the past few years the monkey is busy adding a new hierarchy. You can hear their mumbles now, "Erm... you see that was the final No. 1 you were playtesting. We're now up to final 28."

"Your ideal tester will be a spiteful soul. Their ambition is to wreck all your good work and prove that your programmers were in fact idiots."

Last call

So what you need to do is make absolutely clear that this is the last chance for any changes to code other than bug fixes. Your army of playtesters are not there to say whether the game is good or bad, the puzzles too hard, the action too fast. Like it or not the game they test is the game you are going to publish. Get it in writing, ideally with financial penalties, that this is the final build.

Wheel in the QA Department

Quality Assurance Department has a wonderfully secure sounding ring to it, doesn't it? The image is one of ten hardened cynics in white coats, with five red pens each, short-cropped hair and clipboards. Like the paramilitary geezers in car ads who test whether brakes work. They're the last line in gamer defence. Where the final buck stops. Hard men playing for big stakes. Yes. That's the image. The reality is more likely to be two 16-year-olds working for free pizza after school. Probably wearing Beavis and Butthead T-shirts. Probably playing a game for the first time ever. Definitely not playing with any kind of manual.

The makings of a good playtester

That worst possible scenario aside, your ideal tester will be a spiteful soul. Their ambition is to wreck all your good work and prove that your programmers were in fact idiots. The way they do this is seeking out the options which you could never possibly have thought up. This could be anything from the most obscure usage of objects possible in an adventure, such as "Insert the planet in the mad cow's arse", to even the most unlikely matching in a sports game, like a school team vs Manchester United in the FA Cup.

Should I have programmed a simpler game?

Yes. No doubt about it. You should have stuck with a sliding block puzzle in Visual Basic. Minimum system a 386 and no fiddly memory requirements. You wouldn't actually sell any games – but you'd save yourself a lot of heartache. Remember, even if you complete playtesting, you're still not guaranteed being able to sell anything.

Most companies have suffered from playtesting disasters at some point. PCs are horrible things to get to work and don't we just know it?

Be careful with those bug reports

The gamer at home won't thank you for this, but before actually getting your QA Dept to fill out a bug report, ask them if it's a fatal bug or whether it's just slightly niggling. Most publishers would prefer niggles to get through. There are two reasons for this. First, any bug fix will require extra playtesting. Is the bug really sorted? What are the repercussions? That kind of thing. Second, niggling bugs don't actually mean that players take the game back to the store. Instead you're guaranteed a steady throughput of visitors to your Web site in search of patches. Top stuff!

How long should I allow?

Pick a number. Any number. Double it. Multiply it by ten. Add nine. Then decide whether you want your number to represent fortnights, days, weeks, hours, whatever! There is no British Standard for how long games should be playtested for. Just get the thing out and bury your head in the sand.

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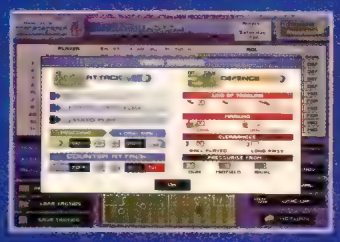

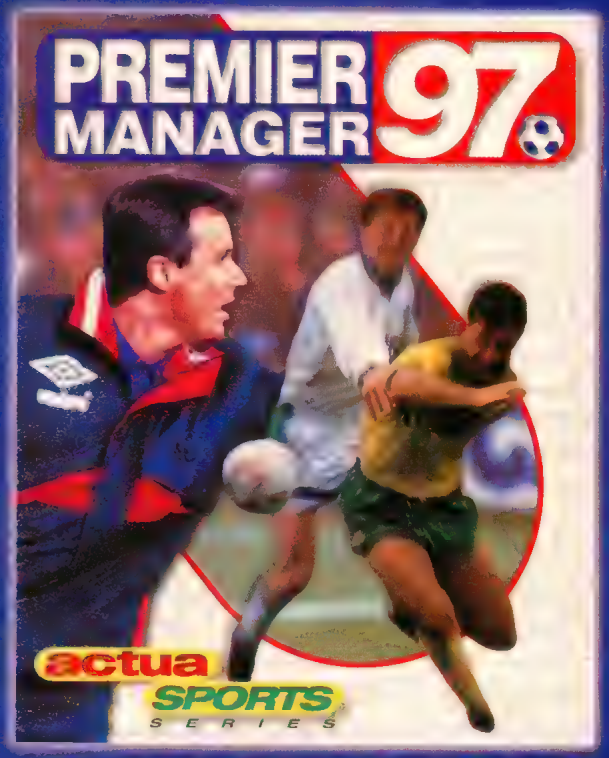

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Cables

Got any opinions that might be printable? Or simply wish to talk about Loughborough? We don't care. Although a bank-note enclosed in your letter will increase your chances of being published more than you could ever imagine. Write to James Flynn, Cables, PC GAMER, 30 Monmouth Street, Bath, BA1 2BW.

On a lighter note

Where were Fish Out of Water and Sort It Out last issue (PCG 42)? I agree with Maurice Cassidy, that this magazine makes me laugh and those are two of the funniest parts.

On a lighter note, multi-player gaming is highly addictive, especially *Red Alert*. **Jon Morris, Hants**

Fish Out Of Water has been replaced by It's All Over, and, we feel, not before time. We thought Sort It Out was reaching a natural conclusion too, although if we can't think of anything better, it'll probably come back.

LETTER OF THE MONTH

Dubious pleasure

I can't be the only female who cringes under the predominantly male gaze within all computer games retail outlets. On the odd occasions that my boyfriend manages to drag me from 'waiting outside', I am presented with the dubious pleasure of being the only female there. I am appeased very little by the magazine stands which feature 'male glossies' as a natural counterpart to computer magazines and am wryly amused that in amongst our hi-tech, cutting-edge computer software shelves lurk apparently timeless calendar girl and playboy collections.

What I find most annoying is that I actually enjoy playing games and reading about software, and as a student I appreciate fully the role that computers have in society. However, I find the same degree of female absenteeism in this area as anywhere else. Actually I should amend that to 'intelligent female absenteeism' as women with bra sizes far in advance of their IQs continue to flaunt all sorts of products for the male consumer.

Most importantly, however, like most women I am a paying, discerning consumer and can you really afford to alienate half your market before you've even started?

Tam, Loughborough

It's unclear what you're trying to say, Tam. Are you pointing out there are too few females interested in computers or complaining about sexist advertising and software? They're both valid points, and we agree entirely. That's why you'll notice we don't allow those kind of ads in GAMER any more. However, we can't force females to be interested in computer games if they're not. Our market research shows PCG's readership is divided 94% male, 6% female. "Half the market" is therefore way off the mark. Depressing but true, I'm afraid.

Sealing the bags

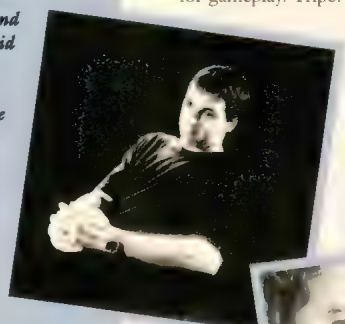
This is the first time I have purchased your magazine and I regret that I have to write with a complaint. The magazine was purchased at Asda Roehampton some 12-14 miles from my home. Imagine my disappointment when upon opening the tape and emptying the contents I find that there are no floppies. Perhaps you should look at heat sealing the bags or putting the freebies in a separate sealed bag.

Brian Cockram, Surrey

We thought we had cunningly bypassed this problem by using a clear material to manufacture the bags. In our naïvety we believed this way you could see the magazine and the coverdiscs through the bag, instantly avoiding the kind of confusion you encountered, Brian. Obviously we didn't count on a man like yourself, though, so from now on we'll try to print a reminder on the bag telling you to check there is a disc attached. As well as a magazine.

On a different planet

I found your article 'Calling All The Heroes' (issue 42) interesting in that it highlighted the old (and futile) debate that the old, golden days were the best for gameplay. Tripe! Sure, the best games on the Spectrum (*Commando*, *Atic Atac*) were classics in their time, but even they are nothing ☛



IN SHORT

I beg that LucasArts do not include a staple remover in The Curse Of Monkey Island.

Gavin Jamieson, Aberdeen

I wash cars to afford PCG. Thirteen cars per issue.

Noel, South Africa

Remember zis: ze Battle of Britain vas just luck und zat no-one can save you now. Not even your Jonathan Davies nor your Loughborough residents.

Helmut Kohl, West Yorkshire

What is it about West Yorkshire that attracts German chancellors?

Did you enjoy your visit to India? By the way, how is this place Loughborough pronounced?

Fotis Tyligadas/ Bill Zymvragoudakis, Athens

Yes thank you. And it's pronounced 'Loughborough'.

IN SHORT

If anyone seriously expects to see *Dungeon Keeper*, don't hold your breath. I've long since given up.

Bunny, Haywards Heath

You truly are an authority on gaming.

PS. If you are in two minds about whether to publish this letter, then just edit it as you see fit.

Ronan McGlue, Belfast

It reads so much better like this.

From the Swedish PC GAMER, you know that magazine that gets your reviews at the games that get top scores and your CD.

Bjorn Stahl, Sweden

You make more sense than most of the letters we receive.

compared to the gems that we're offered now. Games like *Tomb Raider*, *Syndicate Wars* and *Warcraft II* blew my mind and are on a different planet to what was considered good 10 or 15 years ago. As technology advances, expectation changes and the classics of one year ago will never stand up to the best games several years into the future.

Moreover, it's not merely the graphics and sound which have never been better; with it gameplay has taken huge bounds forward. What would you rather play, one of the PC games mentioned above, or a Speccy classic? Don't get me wrong, I clocked up too many hours on the old machine not to love it. All I'm saying is what we've got now is the best we've ever had.

Stuart Sumner, Marlow

Keep it up

I have often wondered about the adverts you put in your magazine. You always seem to put ads for games that you absolutely hate. Surely there are games better than the ones you buy the ads for. In fact I think that your mag would sell better if you had even more advertisements for *Tomb Raider* featuring Lara Croft.

PS. I think your magazine is great, especially for drawing straight lines. Keep it up!

Michael Collins, The Netherlands

I'll let you into a little secret, Michael. We don't buy advertisements. In fact (and here's the beauty) people pay us to put their ads in GAMER. By the way, don't you think it's time you started talking to real girls instead of salivating over a collection of polygons.

Inability to save

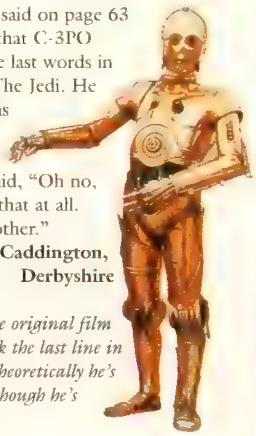
What's the problem? *MDK*. You called it "the most revolutionary 3D game ever", you even said it was "a breathtaking evolution in PC games". So, as a devotee to PC games and an avid reader of PC GAMER I bought the game. After playing it and coming to terms with its weirdness, I must say I agree with you. *MDK* is a unique game, except for its inability to save games at the press of a key. You can't even save games at regular save points throughout the levels. In fact it's only possible to save the game upon completing one of the "vast, not labyrinthine levels".

Could it be that despite its technical excellence, *MDK* is really quite a short-lived game which takes considerably less time to complete than *Tomb Raider* or *Quake*, and that prohibiting save options is a cheap way to extend its play life-cycle?

Dave Thomas, Bedford

Well, Dave (and countless others who've written in to complain), I agree entirely that a better save game facility would have been a good idea. Luckily, Shiny think the same thing and they intend to release a patch to overcome this very problem. As soon as it's available, we'll let you know where and how to get hold of it.

The last words



I would like to correct Steve Owen, who said on page 63 of PCG 42 that C-3PO delivered the last words in Return Of The Jedi. He didn't. It was actually Princess Leia, who said, "Oh no, it's not like that at all. He's my brother."

David Caddington, Derbyshire

Steve used the original film script to check the last line in Return. So theoretically he's right. Even though he's not really.

Not human

I feel I must complain about your article in PCG 40 on *Star Trek: Generations*, as both Guinan and Soran are not human but El Auran, a mysterious race almost eradicated by the Borg centuries ago. Also in the same issue, you say the ogre in *Warcraft II* says "I'm ready" and the other head says "I'm not ready". In fact one head says "We're ready master" while the other says "I'm not ready". Enclosed are both the ogre and ogre mage .wav files to prove it.

Richard Thompson, Clevedon

Tantamount to suicide

I read with interest your supplement, 'The Ultimate Guide to Flight Sims' and very good it is too, until page 54, where Tactic 2 tells the pilot to turn 90 degrees to the enemy. Rubbish! The least Radar Cross Section (RCS) is head on. The greatest RCS is in Plan view (your vertical dive) and the side view is almost as bad. I think you are getting confused with Tangential Fade. This sometimes occurs when an aeroplane flies at 90 degrees to a Ground Based Radar, but modern digital-radars have been designed to combat this. As to the A2A radars on modern fighters, they are all singing and dancing. So while your 'tactic' may work for some, in the real world it would be tantamount to suicide.

Apart from that, it's a great mag. Keep it up.

CW Hanvy (Ex RAF radar operator and current Air Traffic Assistant), Dukinfield

I'll bet you've got a huge handlebar moustache. And a leather cap. PCG

Win an X-36 system worth £100

Saitek

Our letter of the month earns its writer an X-36 system from Saitek, worth £100. To win the opportunity to waggle Saitek's stuff, send your cables to: **James Flynn, Cables, PC GAMER, 30 Monmouth Street, Bath, BA1 2BW.**

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redefines its genre and becomes
the yardstick against which
all other games within that genre are measured.
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sentient
Explore the infinite

_EF2000_ is, without question, the best flight sim ever. But, as Bachman-Turner Overdrive used to funkily sing, you ain't seen nothing yet. **By STEVE OWEN**

TFX WAS AN EXCELLENT, comprehensive and technically accurate flight simulator, but it was *EF2000* that really brought DID the recognition and respect they well and truly deserve. Of course, the tales of how their business expanded from there are legendary (and true). The Ministry of Defence was so impressed they commissioned a special version of the game's war generator to test its tactics, while NATO used the game to train their pilots (the first real EuroFighter prototype isn't expected for another three years) and the Ministry of Defence have taken delivery of weapons training systems based on what they saw in the game. DID's almost anal insistence on total accuracy and their choice to go for a plane that didn't yet exist except on paper has proved most lucrative.

But while *EF2000* continues to sell bucket loads, DID have been working on a sequel that goes not so much a step further, but a full blown yomp across the deserts of Iraq, Andy McNab style. The choice of plane may not be as original as the EuroFighter - we've already seen the F-22 in Novalogic's *Lightning 2* and *Jetfighter 3* from Eidos, with *F-22 Raptor* due soon from Interactive Magic – but the first two are as shallow as a Yorkshire Water reservoir in comparison to the proposed features of *TFX3: F-22*. Actually, this is still a working title. DID's managing director, Martin Kenwright, is so confident that their heritage speaks for itself they may go for an entirely new market with the name. "Everyone who has got *EF2000* is going to buy *F-22* anyway, so we don't need the branding. Instead we want to get some new people involved, so at the moment we're planning to call it *F-22 Raptor*." This isn't confirmed as yet, though, so to save confusion with Interactive Magic's game, excuse us if we stick to *TFX3: F-22*.

Take off!

"This is really mad," bellows Martin in an accent that to southern ears is as good as Liverpudlian. "We started doing an AWACS simulator and the world's first real-time war. We've got it up to NATO standard now."

What Martin is talking about is one of the new features added to *TFX3* that you have *never*

THIS MEANS WAR!

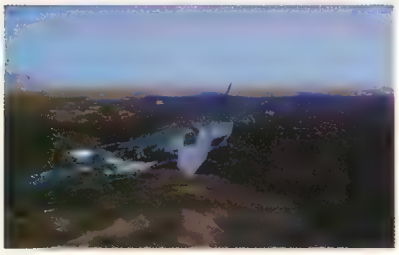
seen before. AWACS (that brute of a plane that looks like it has a Chinese restaurant spinney plate on the top and is used to spy on *everything*), is just one of the planes you can jump straight into. From within you can watch an entire air war proceed without you. Friendly aircraft can be viewed and ordered in a context sensitive manner. For instance, drag an F-22 to a new location and he is given orders, C&C-style, to fly there. Drag to a friendly aircraft and he becomes an escort. Drag to enemy aircraft and he engages. Drag to neutral or unknown aircraft and he circles to get a visual. Best of all, double click on any F-22 in the area and you jump straight into that plane and resume control. As a consequence, mission parameters are much looser. You can be given your personal orders and an overview of the required actions, but you can jump around the squadron as you please.

A small video window shows what friendly planes are up to, with a text window of their current orders. Click on an unknown or enemy aircraft, though, and their actions are cunningly hidden by a static system that gives you *some* idea of what they are up to. You'll need to investigate them with allied aircraft to get a clear picture.

Cruising!

The AWACS is accurately presented in a top-down or adjustable 3D view to give you positional and height information, but it's only when you jump into an F-22 that you will be *truly* blown away by how astoundingly beautiful the game is, and how powerful DID's 3D engine has become. We were shown the 3Dfx and non accelerated versions. The differences were purely one of frame rate and bilinear filtering (where the 3Dfx card softens textures to reduce blockiness), and both looked incredible. The aircraft, as you pan around and spin it, is fully light-sourced, with specular highlights glinting from the glass ☛

"There will be more flight sims. We're focusing on fast jets. We have our vision of the electronic battlefield and we aren't far off reaching it." – Martin Kenwright



The cut away plane (above) is part of the on-line information database, explaining how an F22 works.

The fogging and bilinear filtering gives the most realistic and natural scenes in any game so far

"We've always perceived the value of on-line gaming. We were right in there with Wireplay. We spent, oh, must have been half a million pounds getting *EF2000's* comms up to scratch and getting the network campaign in." – Martin Kenwright

canopy. Zoom in on the pilot and his head bobs under the influence of centripetal forces. Look down and the mountains and 3D buildings cast realistic shadows on the fly. The sun creates lens flare and white outs. Bridges and tower blocks are solid brick work – that hurt, crushing soft white soon-to-be-bloodied flesh. Water-battered coastlines give way to deep blue seas, forests, deserts and even fjords. The ground undulates constantly, without any feeling that the landscape is simply a level blanket with a couple of hills stuck under it.

Fire rockets and watch them trail away. Open your bomb bay doors from the outside view, then return to your radar to see that your own radar footprint has almost certainly made you visible to local SAM sites. Or click on Movie Mode and watch the war carry on without you. See a squadron of three F-22s split at ten miles from a target area and criss-cross in a devastating pattern, cluster bombs twisting and tumbling through the sky.

It can only be described as astounding.

High!

Then climb into the clouds. As you approach them you can see the parallax effect between base and upper cloud formations, and how the wind is carrying them along. As you pass through you can see it first get a little hazy, then translucent, and then patches of cloud obscuring your view of the ground. If you are attempting a laser bombing run and you don't avoid cloud cover, your target jumps around as it attempts to find the area that was once locked in.

Low!

Get closer to the ground, though, and you will find an entire ground battle continuing regardless. We were shown opposing groups of

"Mr President would like a word"

A rather handy little sideline for DID currently is the level of interest that their highly accurate flight, battle and weapons models create. We asked Martin what the MoD was like in bed.

"We've got to be a little bit careful there. We don't want the boys to come knocking. We have got great relationships with the military. In fact we went on exercises with NATO the other week and normally on these things you're just sat in stands, but they actually took us out in a surveillance vehicle, watching three Challengers in attack formation. The dust and smoke was just incredible."

Looking at it now the symbiosis makes perfect sense, but when the announcement came that DID and the RAF were working together, this wasn't the case. How did this little love affair start – a drunken snog in a nightclub? "It's a funny old story actually," explains Kenright. "We did the game and then got a phone call from the military – 'Can you tweak a few buttons? Can you do this, can you do that?' – and all of a sudden we had a laser-guided bomb system. It started off as good PR, a good marketing tool, and then the next thing you know, we've 13 more orders for this particular device, and we think, hang on, we've got to become approved, get auditors, documentation. A games company trying to do this, I mean, what have we done? But we found another company to do this for us, and it ended up getting the whole of DID in order."

It's also an extremely lucrative relationship for DID, although they are naturally cagey about the exact details. "Right now we've got to be careful. Let's put it this way. It could be about three times the amount of the games, but because we're in bound agreements currently, we're keeping it under control. We've cherry picked stuff. We're doing high-tech battle field systems that don't exist as yet, we're doing laser guided bombing, night vision. We're doing anything that we can use in the game, which means that we get paid twice for it. We've had 35 approaches from Farnborough [a major RAF base], and we've taken up 30 of them. Every weapon going.

"Pro rata, considering the number of people working on each

With a carefully modelled particle system, the explosions should look larger and more impressive than any flight sim ever.

tanks firing on each other, with one receiving air support that blew its enemies sideways. You can view convoys of trucks that respond to warnings and plot a new route to their destination.

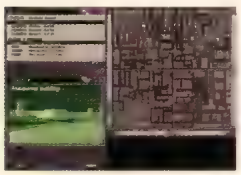
Once again, DID have opted to set *TFX3* in the future, which gives all the flexibility they could need. Set in over a million square miles of the Gulf, DID are able to incorporate Arab, Iraqi, Israeli, NATO and Warsaw Pact armies, producing an estimated 40,000 unique campaigns; *campaigns*, not missions.

Look!

TFX3 also includes a spectacular mission builder offering flexibility and ease of use. A random button keeps things interesting, but you can then change any of the components. Using the enormous map of the area, select a ground or air target, or even a sequence of the dead meats. These guys are displayed in a similar style to the AWACS system, where relatively unknown targets are obscured by static noise. As you learn more about them, though, they begin to resemble real Gulf War footage, especially when they explode thanks to one of your laser targeting bombs.

Second, choose your squadron of Top Gun heroes. You can have up to four squadrons split between the targets, or get some of the loud mouth Americans to fly in support. You aren't limited to F-22s for any of the missions, although these are the only aircraft you can jump into and fly. A-10s and F15s are just some of the others available.

Next, choose what sort of routes they should all fly to the target, and whether this should be the shortest (recommended for deep strikes or if you are just lazy) or the safest (for people that have never been on holiday on their own or jumped over a small stream when drunk). Setting up to 16 waypoints for perhaps 30 aircraft can be a little tedious, so click on Auto to speed this along, and then just drag the waypoints around the map or add some of your own to keep the Americans away from any of our planes – you know how trigger happy those guys are. You can also change the cruising altitude at any point, while keeping an eye on just how likely the threat is of being shot down right there.



Select targets from the map.

Select the heights of the planes.

Split the squadron in approach.

Choose the attack's time frame.

Everything's ready to go. Hoorah!

project, the turnover's far higher for the military stuff. It's easier. You think of a flight sim now. *F-22* has got about a million lines of code. It's hundreds of man years. But we can take one fraction of that and create an entire product around it. Also, the military tell us exactly what they want, whereas, with a game, there is always something new we can add."

It's unusual to hear of a company cherry picking from the military, and the fact that DID can do so says a lot about the quality of the sims they produce. But it actually goes further than this: "We say to them from the start that anything we do for you will be put into our games. We won't do anything that won't be of some use. In the games area we can use the declassified information. We can't put any of the sensitive information in obviously, and we'll modify the software to omit certain numbers and vectors, particularly with the laser bombing.

"With the TIALD [Thermal Imaging and Laser Designation] unit, for example, we spent three months converting it to be used with a two-handled simulator. A month later, the prototype was taken to the RAF Strike Commander, and the pilots got hands-on use of it for the first time. Two days later they were called to Bosnia so they took our simulator with them. Two hours later they flew and took out a Serbian ammunition dump. 100% success rate. The pilot said that until then he just hadn't been able to play with that kit, and now he knew it off by heart. And so we're thinking, wow! This is something that evolved from *TFX*, done back in '94, which evolved into *EF2000*."

DID's AWACS component from *TFX3* is garnering some interest too. There are no other AWACS training systems available currently, although Boeing are also working on one. Needless to say, though, D'av'ID could fare better than the Goliath of Boeing, thanks to the fortune that TIALD has already saved the RAF (and tax payer). An entire TIALD training unit from DID costs £3,000. Before it existed, the RAF were training inside the actual aircraft, which would cost about the same amount an hour for one pilot, rather than limitless hours for limitless pilots.

Information is all

DID also have a very busy Web site, and all of their games are regularly discussed on the Internet Newsgroups dedicated to flight simulators.

"The military is easy compared to punters," says Martin. "At least with the military it's a couple of little squaddies, maybe a captain or two. They're not as vocal as one million Internet users. Our Web site is getting 10,000 hits a week. All the forums are absolutely crammed with *EF2000* and TACTCOM talk – all DID stuff, which is a real ego trip for us. But they're all the most vocal people you could wish for. We could have built two F-22s for real here with all the stuff people want us to put into the game.

"It's like the upgrade to *EF2000*. We sought of came up with a sweeping statement: if anyone had any ideas... And all of a sudden we had a million replies. We did correlate them all and put some of them in. So, it's kind of like a game *for* the people *by* the people."

Look out for DID's `www.f-22 raptor.com` later on in the year.

Finally, zoom in on the targets to decide what the attacking planes should do, who should be shooting what, what angle to go in, what height, the timing (clearly avoiding or coinciding with any other sorties that others may have planned at that moment), and where the supporting planes should circle until the bombers have done their 'business'.

So, as well as the huge number of campaigns that can be automatically generated, you are encouraged to come up with some of your own. It couldn't be any easier if DID employed a man to sit next to you and do it for you.

Over a million square miles of the Middle East have been accurately recreated, including deserts, cities and water.

Later!

DID do seem to be concentrating on flight simulators a little. As well as *TFX3*, we were also shown *EF2000 2*, an extension of the Graphics+ version that had around 30 craft shooting over SVGA landscapes, dodging and weaving at about 50 frames a second.

Martin did express a deep seated interest in doing a football game, but are they ever going to do anything other than a flight sim?

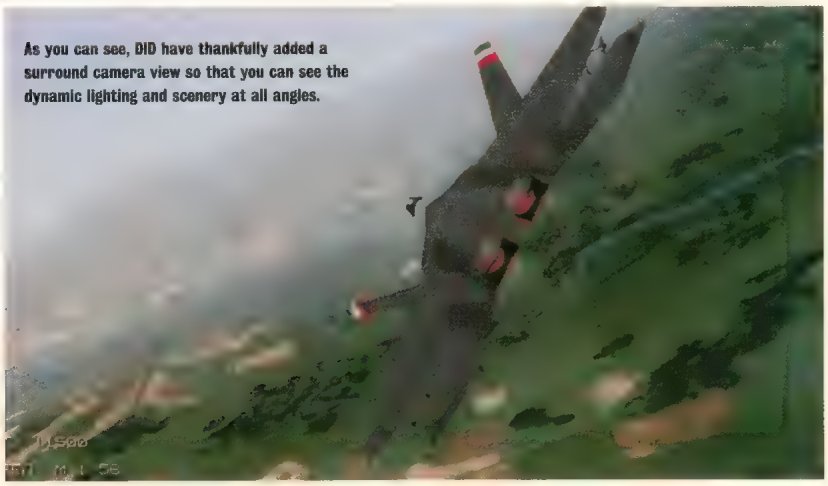
"We're definitely going to keep with our strengths. Just look at the management team here, all the directors. We all did the original *Falcon*. Between the team, we're partly accountable for half to two thirds of all the sims written in the last ten years. *Dawn Patrol, Phoenix, Spitfire 40, Harrier, Navy Strike, F-29 Retaliator*. There will be more flight sims. We're definitely focusing on fast jets. We have our vision of the electronic battlefield and we aren't far off reaching it. We've had a lot of success with Wireplay and on-line gaming. It's huge. We've got incredible 3D technology. Some of the final facets are coming together with our ground warfare technology. And you're not just commanding a truck, but an entire war on every level."

"We did the game and then got a call from the military – 'Can you tweak a few buttons? Can you do this, can you do that?' – and all of a sudden we had a laser-guided bomb system." – Martin Kenwright

And as you speak to him you can see his long-term vision twinkling in his eye. The full virtual battlefield. Simulating entire combat arenas and being able to control as many or as few planes, tanks, ships, whatever – how and when you want. To non flight-sim addicts the AWACS control element in *TFX3: F-22* may not sound so exciting, but it's at the heart of the vision. DID are probably as close to having a realistic battlefield simulator as the military – in years to come the military may be using the one they've developed. But as the system continues to evolve there is the potential for a game that makes the scope of *Ultima Online, Daggerfall* and *X-Wing vs TIE Fighter* look positively limited. Hundreds of players fighting simultaneously in whichever plane they've chosen, cruising together over a virtual landscape affecting the increasingly real war going on around them. It may seem like another vision of ten years' time, but it's closer than you think – DID's technology is not holding it up as much as the broader Internet issues and Kenright is getting in there early.

"We've always perceived the value of on line gaming," he says. "We were right in there with Wireplay. We spent, oh, must have been half a million pounds getting *EF2000's* comms up to scratch and getting the network campaign in. There's only a few people that can even play it, but it gave us the technology. We even created a special version of *EF2000* for the Swedish airforce that connects with their billion dollar defence systems. The final irony, though, is that our graphics are better on a PC than a billion dollar computer."

So, perhaps thankfully, there's no sign of Cantona 2000 just yet. However, *TFX3: F-22* is literally only a few months away. DID seem *very* confident that by October the most ambitious game ever created will be ready for the public to have a go. PCG



As you can see, DID have thankfully added a surround camera view so that you can see the dynamic lighting and scenery at all angles.

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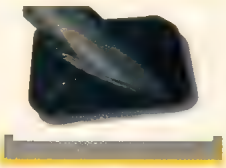

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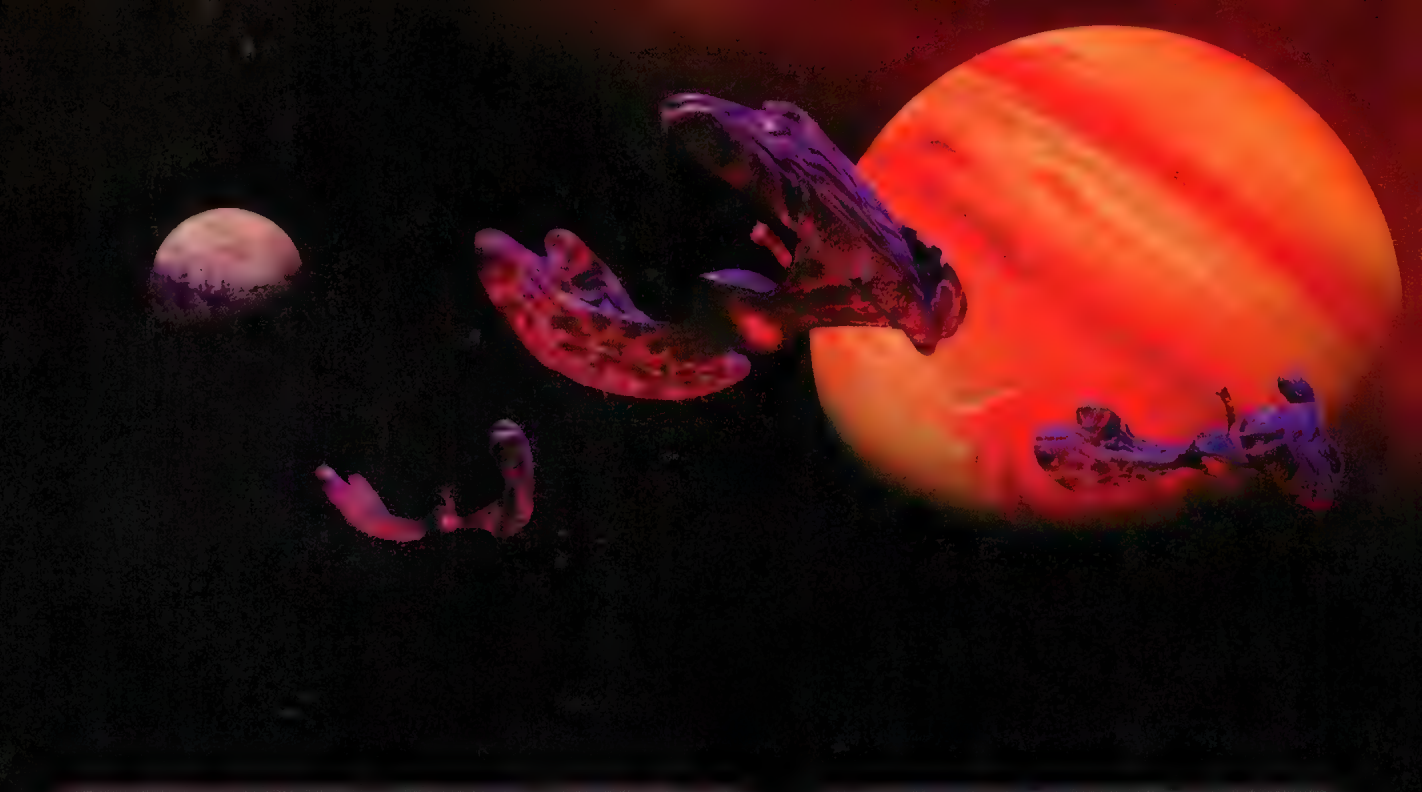

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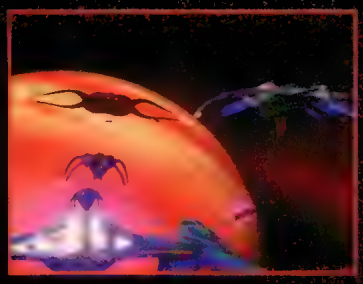

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Road rage

FOR EVER MORE WILL THIS month be known as Dungeonkeeperember, lest we forget that years of waiting are over. I would like to say that Bullfrog's latest is exactly how I expected it to be, but I don't know what I expected. There have been so many previews and background stories that I wasn't entirely sure what I'd be doing in the game, how I'd be controlling the creatures and even how it would be presented. What didn't come as a surprise, though, was that, with Peter Molyneux, his team and so much time behind *Dungeon Keeper*, the end result is a polished, complex and satisfying game. Read Jim's review on the next page to find out more.

Pushing something so gothic aside, though, is the huge number of driving games that have appeared. Eight speedsters have zoomed past in the last two months, but two Williams-Renault equivalents have made it into this issue. Psygnosis' drop-dead gorgeous *Formula One* is the first game to insist on a 3D accelerator card, but the eye popping results are worth every penny. (Incidentally, we'll have a brief look at the latest 3D cards next month.) But *Carmageddon* is the one that everyone will be talking about, certainly for a month or so. It's a bloody mess of a game, but distractingly good fun, and makes driving like a nutter on our roads several minutes later strangely tempting. The other two car games this month aren't anywhere near as much fun and don't warrant a mention here. I'm feeling like that at the moment.

The last two months have been a light breeze through the dirty washing basket of recent PC games. We're all very relieved here at PC GAMER, as our PCs were in some need of clothes with the scent of spring. We've been wearing *Red Alert* so long that there are sweat rings in the armpits. Nevertheless, I still won't be letting on in the slightest about how the games since Christmas will be faring in this year's PC GAMER Top 100 Games Of All Time™. The deadline for final software is over and you'll be able to see what we all decide next month.

STEVE OWEN

How the scores work

We think very carefully about every mark we award. Each score is only decided upon after many hours of concentrated play and accurately reflects not only the quality of the game, but what it offers over and above any similar titles.

If we give a game a good score, it is because it genuinely deserves one, not because the game or associated demo is 'exclusive' or because we want to keep in with the software companies. We aren't afraid to tell you if a game stinks, and they seem only too happy to point this out to us each month. Oh well.

Anyway, here's how it works:

90%+
An almost perfect game and one that will bring tears of fondness to your eyes in years to come. It'll have to be good to get a mark up here.

85%-89%
An excellent game – technically impressive and very enjoyable. It will become the proud owner of our Game of Distinction logo.

70%-84%
Plenty of fun to be had here, but something important is missing.

50%-69%
Flawed in several ways, but perhaps an interesting way to spend an hour or two.

30%-49%
Something has gone horribly wrong somewhere. Through bad design or awful implementation, this game doesn't deserve an inch of shop shelf space.

0%-29%
A crime.

REVIEWED THIS MONTH

107	Actua Soccer Club Edition	84	Lomax
104	Air Warrior II	78	Premier Manager 97
97	Axelerator	90	QAD
76	Carmageddon	109	Reloaded
100	Cave Wars	94	Sentient
80	Darklight Conflict	102	Sierra Sports: Golf
109	Dragon Lore 2	110	Silent Hunter Patrol Disc 2
70	Dungeon Keeper	88	Speedster
83	Formula One	86	Terracide
107	Helicops	106	The X-Miles
110	Katharsis	106	Zombie Wars

PC GAMER's Reviewers

Steve Owen has given a hearty thumbs-up to the new Star Wars films

James Flynn is the editor.

Mark Donald enjoyed our production editor's birthday much more than Steve's. He's obviously been in training

Matthew Pierce still isn't getting anywhere with the girl next door, but he "means to have her". We aren't quite sure what he's on about

David Roberts is the publisher and, despite his job, is the very nicest man you could ever meet

Jason Weston has hexagon patterned wallpaper to soothe his troubled soul at night.

Ed Ricketts is likely to be contributing a lot more now, as he has just left his full time gainful employment... but he's got married, so we'll be seeing a lot less of him.

James Ashton works with Jonathan on the N64 magazine next door, and risks his gainful employment by insisting on playing Japanese game music

Jonathan Hyde was a work experience chap here for the week. Lovely cup of tea

Dungeon Keeper

Publisher	EA
Developer	Bullfrog
Price	£40
Minimum System	486/66, 8Mb RAM (2D Display only)
Recommended	P166, 16Mb RAM
Graphics Accelerator	None
Sound Support	All major cards
Multi-Player	Modem, serial, network
Web Address	http://www.bullfrog.co.uk
Release Date	Out now

Releas

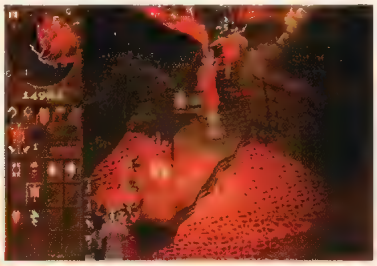
Was it worth the wait? It'll need to be *damn* good to say 'yes'. Read on to find the answer.

IT'S DONE. PETER Molyneux's farewell fling for Bullfrog, and the most anticipated game this side of *X-Wing vs TIE Fighter*, is finished. It's here. No more delays. But can it possibly be good enough? One thing's for sure: describing it is not going to be easy.

In many ways *Dungeon Keeper* is the culmination of classic Bullfrog game ideas, tweaked to perfection (but then it should be, after that unbelievable development time). It will remind you of *Populous* to begin with, then perhaps *Theme Park*, mixed with a little *PowerMonger* and the graphical style of *Magic Carpet*. It borrows the best bits from all, shakes them up and overwhelms you with one hell of an enormous epic.

As the name sort of implies, your job in the game is a dungeon keeper. Deep beneath the ground, you rule over your own private hell of violence, evil and degradation. Above you are lands of happiness and contentment; your job is to spread foul contamination and stinking decay to each of the 25 levels. To do this, you must plan, create and maintain your dungeon, attracting a variety of infernal creatures along the way. These you must feed, house, train and pay to keep them happy.

Once your dungeon is large enough, it will attract the attention of heroes who come



Dramatic scenes (left) like this occur every [illegible] minutes in *Dungeon Keeper*.

Dungeon Keeper used to feature predominantly brown scenery. This has been cured by a series of 'climatic' levels (above). The rosette above each of the creatures' heads represents strength and level and governs the combat.

Lair one and two

From above, your creature's Lair displays a neat, organised pattern full of various creatures...

... but dive into a creature and it all changes. This is the direct control underworld of *Dungeon Keeper*.

looking for your enormous wad. When they do, your foul horde can strike them down and capture their wealth... until eventually, the Lord of the Land comes. Defeat him and you've won the level. Mostly, there will be rival dungeon keepers which you also need to crush, as they lust after your gold and creatures too.

Sounds straightforward enough? Oh no.

Each game begins with the lifeforce of your world, the Dungeon Heart, beating away in its own prebuilt room. If the Heart is destroyed, it's game over, so it needs to be protected at all costs. You're also supplied with a few Imps, your invaluable minions. Imps take care of a great deal of dungeon maintenance and are the only creatures that you can directly create with a spell.

The first job is to dig out some space from the surrounding earth, by marking out an area of square tiles à la *SimCity 2000*. Your Imps then scurry to the scene, dig out the earth and claim the tiles with your colour, which are now ready to build on. Then they start reinforcing the walls with stone. This is important, because enemies (and you) can't dig through walls without a certain spell.

At this point you get the first taster of just how exquisitely detailed *DK* is. It leaves a pleasant tang in your mouth that will persist for every second you play the game. The Imps actually rush to the spot, tiny footsteps echoing, and hammer away at the earth with their picks,

> *"Torture Rooms attract the Dark Mistress, a kinky chick who enjoys being slapped."*

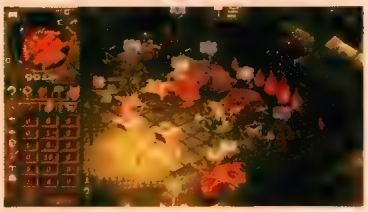
accompanied by faultless sound effects. After a short time, the earth collapses in a heap of rubble, which they then clear up. When claiming a tile, the Imps do a little dance, resulting in an ethereal chord and a small puff of translucent red smoke. Nothing much has happened but already you're fascinated.

Creating rooms is simply a matter of placing tiles of the appropriate room type. But you can't just bang down tiles willy-nilly, because the shape of a room defines its efficiency and productiveness. Square with one door is ideal but other considerations mean this is not always possible. You need a Treasure Room to start with, to store the gold you mine from gleaming seams here and there. Of course, everything you build or do costs money, so a reliable cash source is vital (from the gold). But there are only a finite number of worker Imps and they have to be split between digging for cash and expanding your dungeon. You can create more, but they become increasingly expensive and the amount of treasure in your bank is a major draw for powerful monsters.

The next essential rooms are a Lair and a Hatchery. The former is where all your creatures make their home, so it needs to be large enough to accommodate everything. But high-brow sorcerors don't research new spells as well if ☛

Future proofing

The Dark Library is the home of your sorcerors at first. Research a while and then train 'em up.



A Workshop provides you with the tools to secure your dungeon. May not seem vital but really is.

The Training Room is the key to your battles. Pop your creatures in early and accelerate them.

This is what you spend most your time looking at. The green box is your cursor, the sphere is your Dungeon Heart, the plan and your gold live in the top-left and the key to playing the game (the panel to the left) all blend perfectly together.

they have to sleep in squalor with beetles. So you might need a separate little Lair for them. The Hatchery is just a chicken coop, full of squawking chucks; when a creature gets peckish, it wanders in and rips one to shreds. Nice. Oh, you can become a chicken by the way.

With these in place, you can tunnel to a nearby entrance and claim it. Entrances are the primary way creatures enter your dungeon. Outside are a set number of creatures in the land waiting to be lured into your service, tempted by riches and power. But the other dungeon keeper is also tempting them, so you have to work fast. Your first inmates are usually weak, lowly critters such as the beetle or spider. They wander in to the dungeon, scuttle off to the Lair and make their home.

To gain more powerful creatures, you need to build specific rooms of a certain size. Creatures driven by hunger respond to a large Hatchery near their Lair. Those interested in power love Training Rooms and sorcerors (naturally) prefer to lock themselves away in huge Libraries. You don't have enough cash to go for them all at first. So a Dark Library is the next priority, because it attracts sorcerors who can research there. You'll also want a Training Room to build up your creatures' strength and experience levels. As these increase, they become more powerful and gain new spells or capabilities... but of course it costs a lot of money.

As your sorcerors' research progresses, new room types become available. The Workshop attracts Trolls, who bash away at their machines to produce doors and traps. Again, it's not quite that simple, because there are four types of doors (ranging from the weak Wooden to the almost impenetrable Magic) and six types of traps. Doors are placed in corridors as a security measure and can only be opened by your own creatures (unless you lock them). Traps, such as Poison Gas and Lightning, are excellent devices that you drop at strategic points and which go off when stepped on by an enemy.

> *"The real-time light-source effects are simply staggering."*

Build a Prison and you can capture defeated enemies (that's if you've ordered your minions to attempt to imprison enemies rather than kill them), which can then be tortured in the Torture Room. They might crack and reveal the enemy keeper's dungeon layout... or they could just die and spur on their comrades to fight harder. You can imprison and torture your own creatures. Placing food outside Prisons makes them more willing to co-operate, but if they die, all the creatures of the species will rebel. Torture Rooms attract the Dark Mistress, a kinky chick who enjoys torture and being slapped. Hmm.

Bile Demons, the big red horned gits, eat loads and like toiling in the Workshop. The massively powerful Vampires, however, hate manufacturing. They appear if you build a Graveyard and after a certain number of creatures have died. Unhappy creatures can be palliated in a Temple. Your creatures might get narky if, for example, you don't have enough money for their wages at payday, and could start fighting among themselves.

You also gain more spells through research. These include Heal, Turn to Chicken (wahey!), Disease (spreads disease through the enemy camp), and Sight of Evil (which gives you a brief overview on the map of an undiscovered area, so you can recce where the enemy is). The Scavenger spell (think about it...) lets you woo enemy creatures with vague promises of riches. Creatures have their own, different spells, which can be improved through training. One spell which needs some explanation is always present: Possess Creature.

Most of the time, you view the map from an overhead isometric perspective view, which can be zoomed and rotated. When you cast Possess, you zoom down into the creature and control it, seeing the dungeon through its eyes with a *Doom* style 3D world. It's a remarkable change, seeing your hand built dungeon from afar and then actually *being* in it, wandering about the rooms and watching other creatures. You also have control of the creatures' weapons and spells, which is useful in a battle. But this isn't just any old 3D. When you're a beetle the

"It will take you a long, long time to exhaust all that DK *has to offer, and every step of the way will be a delight."*

The Lightning spell (top) looks fantastic, but you won't see it if you own a 486. One of your chums (above).

view changes to a great lens effect, when you're a fly there's this sort of drug induced composite visual break-up that looks oh so spesh.

Oh yes, sooner or later a battle occurs, usually when you find the enemy. Then it's an all-out pitched fight to the death. Your creatures automatically use their best tactics and spells against the enemy, though for finer control you can possess one and do it yourself. Taking direct control of a creature makes it much more effective. It's not simple, though. I've been playing this for two weeks now and am just getting to grips with all the possibilities.

Crowded battles can sometimes be hard to follow, with umpteen creatures flinging various weapons at each other, though it's easy to see the health of both your and the enemy's battalions. With so much going on, it's often tricky to pick up an individual creature or see who's doing what to who. Generally you have to just sit tight and hope your army is strong enough – there's not much room for clever tactics once the war has started.

These battles are accompanied by the most wilfully godawful noises you've ever heard. Creatures emit bizarre, wordless squeals and grunts at the best of times; put them all together in a scrap and you have one huge horrible cacophony of pain. It's incredibly effective at conveying the chaos of battle. Indeed, sound is a vital part of *DK*, artfully employed to maximum effect throughout.

The battles were the only element that disappointed me at first. Initially, it seems as if you have very little control over them, but slowly two things happen. First, you realise that the battles should be won or lost before they occur because your strategy has put highly trained creatures in the right place at the right time. When there is a problem, nip inside a level 8 sorceror and blast some spells off from a distance.

DK has the visual flair of *Magic Carpet*, with that strange 'organic 3D' appearance and oddly curvaceous angles. The real time light-source effects are simply staggering. By default, everything casts up to four (translucent) shadows. Your cursor acts as a torch, lighting the immediate area, and with the light from wall torches, spells, fire and so on, a hugely atmospheric arena is created. The first-person view isn't quite *Quake*, with the characters appearing as blocky bitmaps, but it's good enough. All this splendour takes its toll at times. High-res mode is ideal, but isn't really playable on less powerful machines (less than a P133). Even the low-res mode chugs a bit when there's a lot happening on screen. For lower specs there is a flat option that is just about playable.

Dungeon Keeper's prolonged development time has paid off just because of the amazing attention to detail. For example, when you place a trap, it doesn't just appear on the spot; a spare Imp has to go to the Workshop, collect the trap and drag it to the right place. At payday, creatures drop everything and immediately head for the Treasure Room to get their wages. Sacrificing various creatures in the Temple can bring good or bad results from the gods, so you have to experiment. Each creature has its own name, wage and even blood type. And so on.

I've just about covered the basics here, but *DK's* subtleties go much further. There just isn't room to mention the slew of creatures' spells, or the thrill of multi player games, or the effect a new lunar cycle has on the game... or the guest appearance of a very famous character from certain other EA titles.

It's a breathtaking achievement. We've all had our doubts for years, but Molyneux and his team have locked them away forever. With an end result so full of good things, seething with finely balanced perfection and packed with innovation, you can't help but love *Dungeon Keeper*.

To rationalise this further, there are about 30 dedicated single-player levels in the game. I reckon the above enthusing covers playing half way through an average sized level at the start of the game. There is more in *Dungeon Keeper* than any game I have ever played. Ever. And I know I haven't even found half of it yet.

JAMES FLYNN

PC GAMER – THE VERDICT

A stunning achievement. Amazing depth, incredible balance and Broadway quality drama to get here.

95%

Welcome to the Ho

It's been over three years in development and caused more agony for the team members than most people will suffer in a lifetime. But now it's all over. *Dungeon Keeper* is finished and life can return to normal. Whatever normal now means, that is...

WHEN VISITING DEVELOPERS the scene you normally first encounter is one you last saw at school just before the inspectors arrived. Programmers sit there in hurriedly tidied offices, working away diligently and towing the company line whenever a dictaphone strays within ten feet. The boss-man sits in a separate office and pretends he's always this pally with the troops.

Peter Molyneux's house/office/den is different. An average-sized room not so much houses as provides a home to the *Dungeon Keeper* team. Organised chaos is a much over-used term, but when you see it in action you see what they've been experiencing during the last year of intensive work on the game.

Dungeon Keeper IS evil. It has wrecked most of the team's long-term relationships. It has left Molyneux's house in building tatters as he finishes it. The constant line of cars begging to be driven home has plagued his neighbours. And the political fallout it indirectly unleashed has caused EA more headaches than anything else during the '90s.

So what does the Dungeon Keeper himself think of it all?

PC GAMER: What's the most amazing aspect of the game?

Peter Molyneux: It has to be the way you can play pretty much as you like. It's a game that adapts to your style and not the other way round. A lot of people say they don't really use the first-person view to play at all, and a few people do use it. Up until the end we were all working to balance this out, and the last minute inclusion of the barracks was the final touch. Gathering your monsters in one place and possessing one lets you lead an army through the dungeon. But you can still choose whichever method you like to win. Most work, but some work better than others.

PCG: And technology wise?

PM: The most amazing piece of technology about the game is how the creatures navigate. Every single other game in existence either uses the wall hogging or uses the signpost method. So you either have creatures moving much further than they need to or skipping around in blocks. You can't do either of those in *Dungeon Keeper* because of the way the engine works. Every polygon in the game is alterable. If you want to dig this or that area open, then you can, and that will destroy all the pre-set variables. So we use a combination of the two methods to get what we want. The navigation code is actually by far the largest piece of code in the game. You can alter the map infinitely and all your creatures will find the best new way to walk.

PCG: You were first showing *Dungeon Keeper* to people in the spring of 1995 and to be honest the graphical differences since then are not really that vast. Why has it taken so long?

PM: If you saw *Dungeon Keeper* even a year ago, externally it's not that different. Internally, it's hugely different. For God's sake, my kitchen was supposed to take three weeks and it's taken three months. And if something as finite as that can slip so much, then what hope has a game got. It's been the balancing. There are just so many interconnected elements in the game. You tweak this and the rest of the game just falls apart, but if it needs tweaking, then it has to be tweaked. A couple of weeks ago I changed the imps' priority from collecting gold to bodies, and the entire thing fell apart. I played around for a while and finally settled on a 50/50 balance, but these are the problems we've been constantly coming up against. When people realise that games are an art and accept it and work around it, then that'll be a big step forward for the industry.

use of Molyneux

PCG: So what are you doing next?

PM: I'm leaving Bullfrog. My last day will be the day that this game goes into final test. I'm very, very, very sad, but also very relieved.

PCG: When did it all go wrong?

PM: It was fairly shortly after the buy-out. Towards the end of *Magic Carpet* was the last time it was really right at Bullfrog. It felt like everyone was on one side, sitting there playing the multi-player game every evening and having a fantastic time.

A lot of it is my fault. I thought I would actually enjoy the corporate side of it, but then I realised that this [designing games] is what I enjoy. I thought it would be great making all these decisions and leading a normal life... going home at seven o'clock and all that. But it turned out to be an utter nightmare. I was horribly, horribly hated because I didn't take any of the shit.

PCG: How do you think the company suffered for the upheavals?

PM: Bullfrog have risen in size to about 100 people and anything I could do with any of the games became so limited. I could perhaps spend half a day on *Theme Hospital* and half a day on *Syndicate Wars* and *Populous*. So I ended up being hugely unpopular because all the team would see is this idiot walking in and saying, "Do this like this" and "Do that like that". You just cannot do a game like that – you have to be there and explain why things work and don't work and work with people.

So I saw all the projects starting to suffer and so (about a year ago) in fact I said, "That's it, I'm not doing any more corporate stuff", and I'll concentrate on *Dungeon Keeper*. And it was halfway through that that I realised that the political situation wasn't going to work any more. I had to be on the same level as a programmer within this company that I'd built up. It's odd, because I was vice president of Electronic Arts and president of Bullfrog.

PCG: Why did you sell Bullfrog in the first place?

PM: I sold because I was scared to start with. Really scared. The way the industry was going then was that everyone was talking about licences and properties and Hollywood deals and that was scary because no-one really wanted to talk to Bullfrog. It was just this little plucky Guildford developer with none of the glitz of the other companies. The other thing is that when you build a group up, you notice certain things when it gets to a certain size – about 35 or 40.

Dungeon Keeper: Molyneux's final Bullfrog game.

"I'm leaving Bullfrog. My last day will be the day that this game goes into final test. I'm very, very, very sad but also very relieved."

Bullfrog was amazing! No-one had ever left Bullfrog in the whole time until then. Everyone was getting the same feelings... wanting promotion, wanting to go somewhere but there was nowhere to go because no one was leaving! That, and it was a fuck of a lot of money.

PCG: And what do you think of EA now?

PM: EA have been unbelievably patient and would have finally killed *Dungeon Keeper* [like they did *Creation*] because it would have become too embarrassing for them to have it slip out of this quarter. But whatever some people say about EA, they are one of the only companies making money in the industry at the moment. And thank Christ for that, because if they weren't, then we'd all be in trouble.

PCG: With what's gone on since they paid the $40 million, do you think that EA regret the decision to buy?

PM: EA have already got their money back. *Theme Park* alone has sold over two million copies now. Two and a half years after buying they've got *Theme Hospital*, *Dungeon Keeper*, *Populous 3* and *Theme Park*. Plus they keep the intellectual properties to the *Theme*, *Populous* and *Dungeon Keeper* series. They bought an up-and coming and stable developer in a world where everyone was going bust. I don't think they regret buying at all. Okay, it hasn't been all wine and roses and they'd have preferred it if I had stayed.

I don't regret selling at all. I regret it in a way because Bullfrog have changed now. Every area has a first aid officer, there are fire drills on the first of every month and it is a profit-run corporate company with personnel managers. Everyone has careers. It is the company some people wanted. It's just not the one for me anymore.

PCG: And, the big question... What are you up to next?

PM: Myself and three friends are going to form a new games company. I can't say any more than that at the moment, but I can say I'm not going to take everyone from Bullfrog with me! You can't build up a new company with a lot of people from an old one with a lot of idea about how it should be run. Also, I still feel for Bullfrog and I hope it enjoys huge success – I wouldn't want to hurt it in *any* way at all.

So, Peter Molyneux and Bullfrog have gone their separate ways. He's forming a new games company. And next month we'll be paying the post *Dungeon Keeper* Molyneux a visit and telling you the *full* story. PCG

Carmageddon

Publisher	SCI
Developer	Stainless
Price	£35
Minimum System	P90, 8Mb RAM
Recommended	P133, 16Mb RAM
Graphics Accelerator	None
Sound Support	All major cards
Multi-Player	Network (modem & serial – Win95 only)
Web Address	http://www.sci.co.uk
Release Date	June

With several cows' innards littering the road, turning doesn't come easy – hence the bloodied tyre marks on the road. The Pratcam in the corner, a basic representation of 'you', is a bit pointless, but you can turn it off.

"The game they tried to ban" or the one they should have done? SCI's new driving simulator is a killer.

NONE OF YOUR RUBBISH post-apocalyptic balderdash of televised slaughter races here. This game is just a straightforward rip-off of that terribly tacky early '70s Stallone movie Death Race 2000. Or rather, since even the rendered intro nods the wink in the film's direction, this might be what is called a 'tribute'.

But it won't be any attempts at claiming copyright infringement that will bring about *Carmageddon's* controversial status. This is one hell of a sick game that feels no shame in six cars battling to kill as many pedestrians, guards, police, cows and grannies on Zimmer frames as possible. In fact, not only *can* you annihilate the screaming, fleeing victims, but you are financially and temporally rewarded for your accuracy, and further remunerated for doing so stylishly (such as during a spin, reversing into them, or by piledriving their puny frames against anything that doesn't give). And it's all in the name of healthy good fun, but the kind of healthy good fun that will, inevitably, bring politicians screaming down on top of the software industry demanding censorship, restrictions, and, ironically, blood. Thank God, then, that the election has come and gone.

Primarily, *Carmageddon* is a race game. In fact, if you have no bloodlust or tend to faint at the sight of crimson corpuscles, you can remove the pedestrians (legally). It then becomes pure off-road racing around 36 routes from 11 individual areas, with you hoping to get through the course ahead of the competition and before the timer runs out. Courses schmoarses, though, because, just like *Monster Truck Madness*, *Carmageddon* is more than happy to let you take any route between the checkpoints you like, although large buildings and rocky outcrops are a little harder to smash through than tents and fences. However, if you choose not to take the suggested route, you will be constantly studying the map (a Tab key away) as there is no on-screen radar to guide you towards the next checkpoint.

The more the messier

We know, we know, but if you *are* lucky enough to have access to a network (or any system that supports DirectPlay, such as a modem or serial cable under Windows 95), *Carmageddon* has some added surprises. A range of deathmatch games sees up to six humans attempting to destroy each other or wipe out more pedestrians than the others, or even play a game of tag. SCI kindly set up a special network day in Bath so that we could give the system a decent go. It's great fun, as you can imagine, but even after just a few hours, some people were tiring of the multi-player aspect. Its long term appeal is again in question.

Freeze at the right time and see all body parts.

(Above) One of the sicker moments: granny and Zimmer frame are not as tough as huge Nazi car.
(Below) A cow splits. As does his pal, resulting in the 2x Combo Bonus for two simultaneous deaths.
(Below-left) I've just had a huge lunch and I'm finding all this just a little hard to stomach. Still... ha ha ha.

dgy

The 11 areas tend to be of four broad types. City life is accurately recreated using towers, traffic and street lights, ad boards, stop signs (to be ignored), petrol pumps and rather a lot of suited humans. Out-of-town areas have plenty of water (which, unless it is ocean, you are generally encouraged to drive into, just like that bit in The Spy Who Loved Me), grass, cows and people in swimwear. Desert just looks a bit browner, and snowy areas have Swiss cottages, churches, more cows, and, oh yes, snow. Dotted around each level are various power-ups (which for some reason the computer cars ignore), which provide the basic, predictable extra time, extra armour, extra offensive (so your collisions do more damage to the opposition), extra speed and instant car repair (you can do this yourself, at the cost of cash). Less predictable, though, is the power-up that blinds the pedestrians, which stops them running away when they see you, so that you can send them into a panicked fleeing when you honk your horn. Other benefits include the ability to drive under water (rather than just float uncontrollably), the vertical wall climber and the inanely named Pedestrian Extro-Bastard Ray, which zaps anyone who gets close.

All of a sudden a very basic racer has been transformed into something complex (in design terms), varied and unique. The distinct racing modes soon blur into one as you race, kill innocents, attempt to kill opponents *and* just go for a burn. There are very few games that leave you and any passers-by screaming with laughter and hatred as your car takes a long spinning dive on to a herd of cows, before catapulting into a fleeing couple and crashing into an opponent car, sending him over a cliff.

> *"Kill innocents, attempt to kill opponents* and *just go for a burn."*

The physics modelling of the cars is impressive (although gravity feels a little low or your car too light at times). Each vehicle (there are 16 to drive) steers a little heavily – you'll be relying on the handbrake to make anything greater than a gentle bend – but the bounces and tumbles are very convincing, thanks to the tyre tracks left (rubber or blood) and sparks shed. Car crumpling is slow and detailed, and handling is affected by heavy collisions.

Although there is an SVGA version, you will need a P200 to get even a bearable response. The VGA version still draws in a little too close to your perspective, so targets or obstructions are difficult to see in time at top speeds.

But while this is undoubtedly a great, fun game, there are some problems. The moral issue clearly has two sides, and there will be some that embrace its lack of hand holding and those that are sickened by the cheap violence. Still, if watching an old lady disintegrate or your driver saying "Say your prayers" as he mows down a group of churchgoers bothers you, I can't imagine you would have got this far into the review.

Of greater consequence, though, is the long term interest in *Carmageddon*. This can never be a game in the '90s because I just don't feel that you will be playing this game after the summer. *GP2* is a driving game you will play until *GP3* turns up, but *Carmageddon* is unlikely to be played frequently after the first few, original weeks. STEVE OWEN

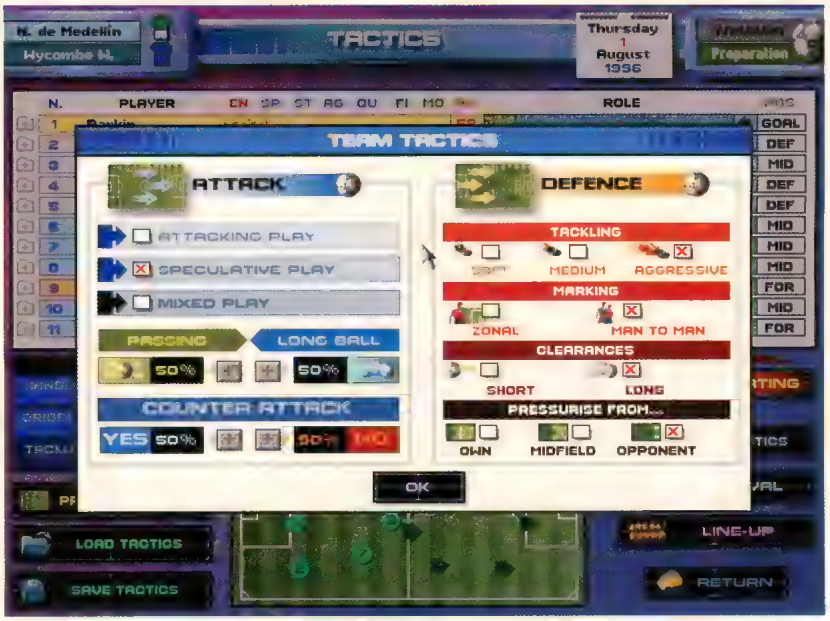
PC GAMER – THE VERDICT

Slickly and sickly made, upsetting, exciting, amusing, but a bit of a flash in the pan.

88%

Premier Manager 97

Publisher	Gremlin
Developer	Dinamic
Price	£40
Minimum System	486DX2/66, 8Mb RAM, Win95
Recommended	P75, 16Mb RAM
Graphics Accelerator	None
Sound Support	All Win95 cards
Multi-Player	None
Web Address	http://www.gremlin.co.uk
Release Date	Out now



Lazy managers can opt for predefined tactics, although they can also be customised to suit your every whim.

There's nothing fantasy about this latest football league management simulator thing™.

HAVE YOU EVER FELT LIKE throwing your PC out of the window? Not because a game is lousy, but because it is so frustratingly good. No? Well, let me introduce you to *Premier Manager 97*.

All self-respecting football mannie players swear by *Championship Manager 2*. Okay, it isn't the prettiest game to watch, but the addiction level and pure football oozes from the screen. It's set the standards that fans of the genre expect from others. *(Except Steve Faragher, that is, who still hates it. – Jim)* *PM97* fares well, and, in its own right, probably marks the biggest step in football management games since *CM2* was first launched two years ago.

The breakthrough is down to one essential element – the ability to watch highlights of every game your team plays (with commentary from Barry Davies). You can see tactics and the latest signings really having an effect on your game. And there's a noticeable difference between Premier League and Division 3 game

"It felt like the real thing and I loved it."

qualities. I guarantee that watching Wigan for an entire season really makes you feel like you are in the Third Division, with hard training needed for a decent move. It felt like the real thing and I loved it.

It proves very difficult to get any player in their right mind to move to a dull Third Division side – which might be frustrating, but is very realistic. The only realism quibbles I'd have relate to the amount of cash each team has to start off with and, second, to players and teams from lesser footballing nations. You'd think that you could pick up talented but cheap players from clubs in these countries, as most of them operate amateur leagues, but *PM97* rates these players as Division 1 standard and you'll find it nigh on impossible to sign them up for a lesser side.

The game has vast depth. You can choose to manage any of the 92 English clubs. You can approach players from hundreds of teams around the world in a bid to convince them to move to your club. You can hire and fire your backroom staff, train players, use predefined tactics, build up your stadium, scout for players and develop a youth policy. You can also choose to play a specific scenario (Pro Management) where you must meet a series of specific targets at lower league teams. What you can't do as well as you'd like is manage the transfer market.

This *is* Gremlin's most impressive game in the *PM* series. It's more realistic than *PM 1* and *2*, and, thanks to excellent highlights, you do get the full management feeling that even *CM2* could not quite deliver. It's hard to see it wresting fans away from *CM2*, though. Not because it isn't an excellent game, but because it doesn't quite offer enough to make it worth the long-term effort.

DAVID ROBERTS

Rounded

PM97 lets you view highlights of every game your team plays. It's often torture for Third Division managers, though.

PC GAMER – THE VERDICT

Football management games have entered a new era, and *PM97* is leading the way.

80%

You carved your soul to shreds in servitude to a dark god, but false promises and betrayal were your only reward. Now you've got a score to settle, and it will be measured in ...BLOOD

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Darklight Conflict

Publisher	EA
Developer	Rage Software
Price	£40
Minimum System	P60, 16Mb RAM, x4 CD-ROM
Recommended	P133, SVGA
Graphics Accelerator	None
Sound Support	All major cards
Multi-Player	Six-player network
Web Address	http://www.ea.com
Release Date	Out now

Outer space as designed by Armani and lit by Ridley Scott.

Ker and indeed blam. It looks pretty, and plays fast, and yet somehow it will have you crawling the walls.

WHAT A GORGEOUS GAME. Light-sourced shading, lens flare effects, beautiful explosions, and all in SVGA running at a decent rate on a P100 – it's almost magical. *Darklight Conflict* is a 3D shoot-'em-up affair, a cross between The Darkening (without the tradey/talking bits) and *TIE Fighter* (without the genius), and it's a joy to behold.

Standard drill: 50 increasingly difficult missions, linked by an on-going story (though no cut scenes). Multiple weapon types preassigned for each mission. Excellent 3D effects with wonderful texturing and extremely effective lighting. Occasional wingmen and the odd tractor beam. Hyperspace trips from sector to sector that look suspiciously like the end of 2001: A Space Odyssey. Burbly, vaguely techno ambient music. Oh yes, and a slew of annoying aspects which will soon have you cursing like a good 'un.

Stress, for instance – that's the name given to damage incurred on your hulls, but it's also likely to cause a great deal of the real thing. Temporary stress occurs when something hits a hull, and it soon wears off, so it's not a problem. Permanent stress happens when the hull is breached too forcefully; you then limp around with a dangerously vulnerable hull, with one hit usually causing instant death. And there's no way to repair it. So one accidental collision right at the start of a mission means you'll almost inevitably cop it later on.

Dim

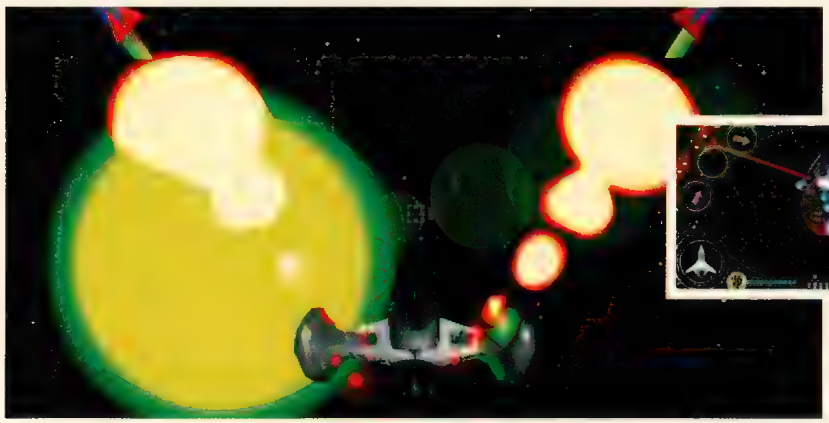
"A slew of annoying aspects which will soon have you cursing like a good 'un."

You can use your shields to protect hulls, but this drains energy – and if your shields are up, you can only fire the puny secondary cannon. Grrr. Why can't you divert energy from shields to hull, à la *TIE Fighter*? Energy for topping-up your shields is available, but only by collecting the right colour of, er, thing in hyperspace tunnels. Get the wrong one, and you lose energy. Grrr again.

Then there's the classic *Elite* docking problem. Viz: you limp home after a long day's fighting among the stars and attempt to dock with the mothership, only to end up crashing into the docking bay's doors which haven't opened, failing the entire mission and having to start all over again. The doors only activate a fraction of a second before you hit them, and if you don't fly up at nigh-on a right angle, they won't open at all. Lovely little 'feature'. The same happens with hyperspace portals: fly into the edge and you're instantly frazzled.

The missions themselves are all or nothing: you either complete each stage, or you die and start again. There's no skipping bits, and plenty of tedious re-tracing of steps, such as clearing an asteroid field (snore) before a big fight. Saves only occur when you complete a mission.

What to make of *Darklight Conflict*? It's nowhere near as complex as its two above-named antecedents, yet it's not immediate and friendly enough to fill the odd hour. It's two thousand times more frustrating that it needs to be, and repeating all those missions soon makes it seem stale and pedestrian. But hey, it doesn't half look nice. ED RICKETTS



Even the blast from the weaponry has secondary flares on it. By the way, the big green thing is a planet.

PC GAMER – THE VERDICT

Glossy and slick it may be, but those nigglesome 'features' make it a real pig to play.

62%

THE JOKE'S ON YOU IF YOU DON'T GET IT.

"PANDEMONIUM is positively stunning"

"Platform perfection has finally hit us"

9/10

92%

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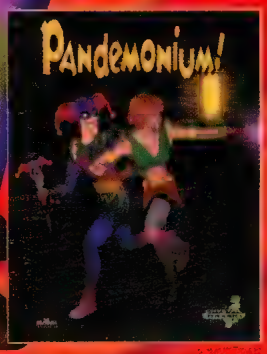

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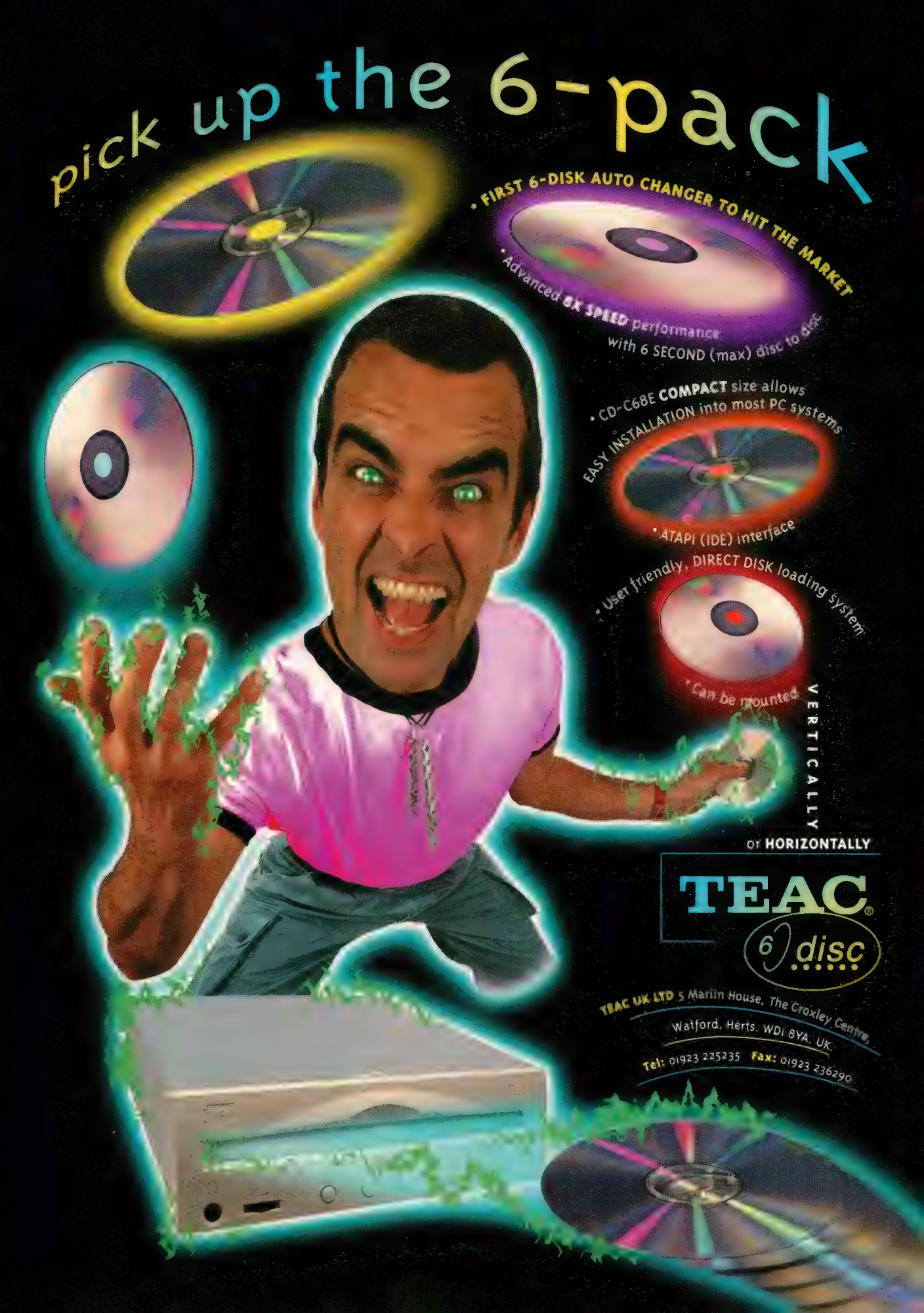
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Formula One

Publisher	Psygnosis
Developer	Bizarre
Price	£45
Minimum System	P100, 16Mb RAM, Win95
Recommended	P166, 24Mb RAM
Graphics Accelerator	3Dfx and Rendition, any D3D card
Sound Support	Windows 95 compatibles
Multi-Player	None
Web Address	http://www.psygnosis.com
Release Date	Out now

(Above) The beauty of Monte Carlo is like... um... well, remarkably similar to how *Formula One* portrays it to be honest. (Right) It does look incredible.

The best selling PlayStation game of last year can now be played on your PC – if you've bought a 3D accelerator.

Slick

THIS IS JAW SCRAPING ALONG concrete floor time. *Formula One* is, without doubt, the best looking, fastest moving arcade game available for the PC. Only the Ultim@te Race demo that's given away free with the Apocalypse 3D card exceeds it visually, but this is a full game – not just one track. It's a full-on official Grand Prix racing game that, to be honest, you would happily play in an arcade. 30fps, totally smooth and incredibly detailed graphics the likes of which PC owners have always dreamed.

It's also the very first game to *demand* a 3D accelerator card. The 3Dfx, once again, comes out on top here, producing the fastest, most fluid scenery, but a Rendition Verite card (such as the 3D Blaster) or any card with Direct3D drivers does a pretty good job.

> *"The perfect game to pick up and play in a spare half an hour."*

Formula One is an almost direct port of the PlayStation game, which means unfortunately all the little problems associated with the original remain. Computer cars exhibit the most unforgivable faults. When executing an out-breaking manoeuvre on corners at the end of a straight, unless you are able to get past them fully, they cut back onto the racing line, even if you're occupying it.

A mangle of tyres ensues, and you can bet your bottom million dollars that it will be your car that spins out of control.

Then there's the lost settings. Of course, if you have a PlayStation, you expect to have to save your preferences, but us lazy PC owners are used to having all our old settings there next time we start the game. It doesn't happen on *Formula One*.

Nevertheless, they're relatively insignificant gripes when put next to the overall package. This has all the beauty and enjoyment of *GP2*, but basically takes an arcade approach throughout, making it the perfect game to pick up and play in a spare half an hour. While there are arcade and simulation modes, the sim is obviously nowhere near as comprehensive as *GP2* – wing settings can be changed but it's a token effort. The other options affect the difficulty – racing is harder when your car is susceptible to damage and easier if you set your car to be faster than the computer players or turn on 'cornering help'.

And then there's Murray Walker's commentary, although he gets it as wrong in *Formula One* as he does on the telly. The biggest problem is that if three things happen at once, Murray mentions them one after the other: "There was definitely a collision there" when it happened ten seconds ago. Perhaps the final disappointment is that there is no modem or network link-up mode. The PC is ideally suited to this treatment, and even the PlayStation supports two players.

The points may sound negative and while they *are* mark sapping, they aren't enough to spoil a hugely enjoyable driving game. This is the fastest, slickest most instantly gratifying racing game on the PC and 130,000 PlayStation owners in the UK can't be wrong.

STEVE OWEN

PC GAMER – THE VERDICT

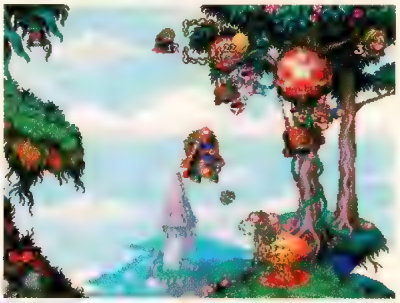
The first decent reason to splash out on a fancy graphics card; fun, fast and only slightly flawed.

87%

Lomax

Publisher	Psygnosis
Developer	In-house
Price	£40
Minimum System	P60, Win95, 8Mb RAM
Recommended	P133
Graphics Accelerator	None
Sound Support	All major cards
Multi-Player	None
Web Address	http://www.psygnosis.com
Release Date	Out now

(Below) Mr Lomax ponders which special ability to use next. (Right) In the end, he simply decides to jump into the air like a raving maniac, instead.



Oh no, more *Lemmings*...? Oh yes, but it's not quite what you think.

Perky

IT'S THE FIRST RULE OF marketing: never abandon a concept until it's been so thoroughly milked, re-hashed, re-packaged and re-released that everyone's sick of it. Producers in Hollywood probably have this statement framed on their office walls, and the PC is no stranger to it either. Perhaps the most persistent offender is *Lemmings*, that once fresh and lively idea that now seems, well, a little bit overdone.

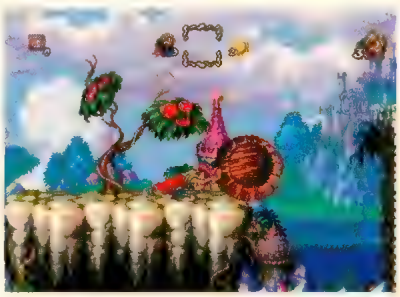
So, then, to the inevitable *Lemmings* platform game, *Lomax*. Actually, *Lomax* combines the traditional *Lemmings* concept with the platform game format. This might sound like

> *"A slick, polished and professional platform game."*

a cumbersome idea and indeed the game would be a lot more schizoid if the ratio of platform to puzzle wasn't so high – about 90% to 10%.

Lomax the lemming is on a mission to save LemmingLand from Evil Ed, who's put a spell on it, and... yes yes, that's quite enough of the 'plot'. This is yer standard platform format, with multiple passworded worlds, start points in each level, bonus levels and just about every reaction test in the book. Lomax runs and leaps, of course, and has two forms of offence: the spinning attack, à la Sonic, and his (ahem) magic helmet, which can be thrown at baddies and always comes back. Spare helmets can be collected from pots, and these provide extra protection in the event of an attack.

The traditional lemmings abilities, or at least six of them, can be picked up as icons at strategic points and used a certain number of times. These include digging and bridge building plus special bomb, flaming, grab and hover helmets for attacking and getting across tricky gaps. And there are springboards, ropes, hints, stepping stones, etc. to your heart's content.



(Above) It's not often you see stepping stones in a platform game. (Right) Er... roll out the barrel? Sorry.

Lomax is immensely pretty. It runs happily in full screen 16-bit colour and the movement is more than acceptably smooth, with five-level parallax and multiple planes in the playing area. Naturally, the lemmings have been resized and tarted up for the new format, but they're still recognisably the little gits who you've sent to their deaths thousands of times. It's nothing particularly new, though it is pleasant enough.

In fact, the only unusual thing about *Lomax* is that it was written by just two Norwegians, one to do all the coding and one to design the graphics. That's pretty impressive given that similar platformers (on the PlayStation, for instance) have teams of ten or so. This is not to say *Lomax* looks amateurish – quite the opposite; it's as slick, polished and professional a platform game as you could hope to find on the PC. It won't win any awards, but it's reassuring to see the PC can still muster up a decent platformer if need be. ED RICKETTS

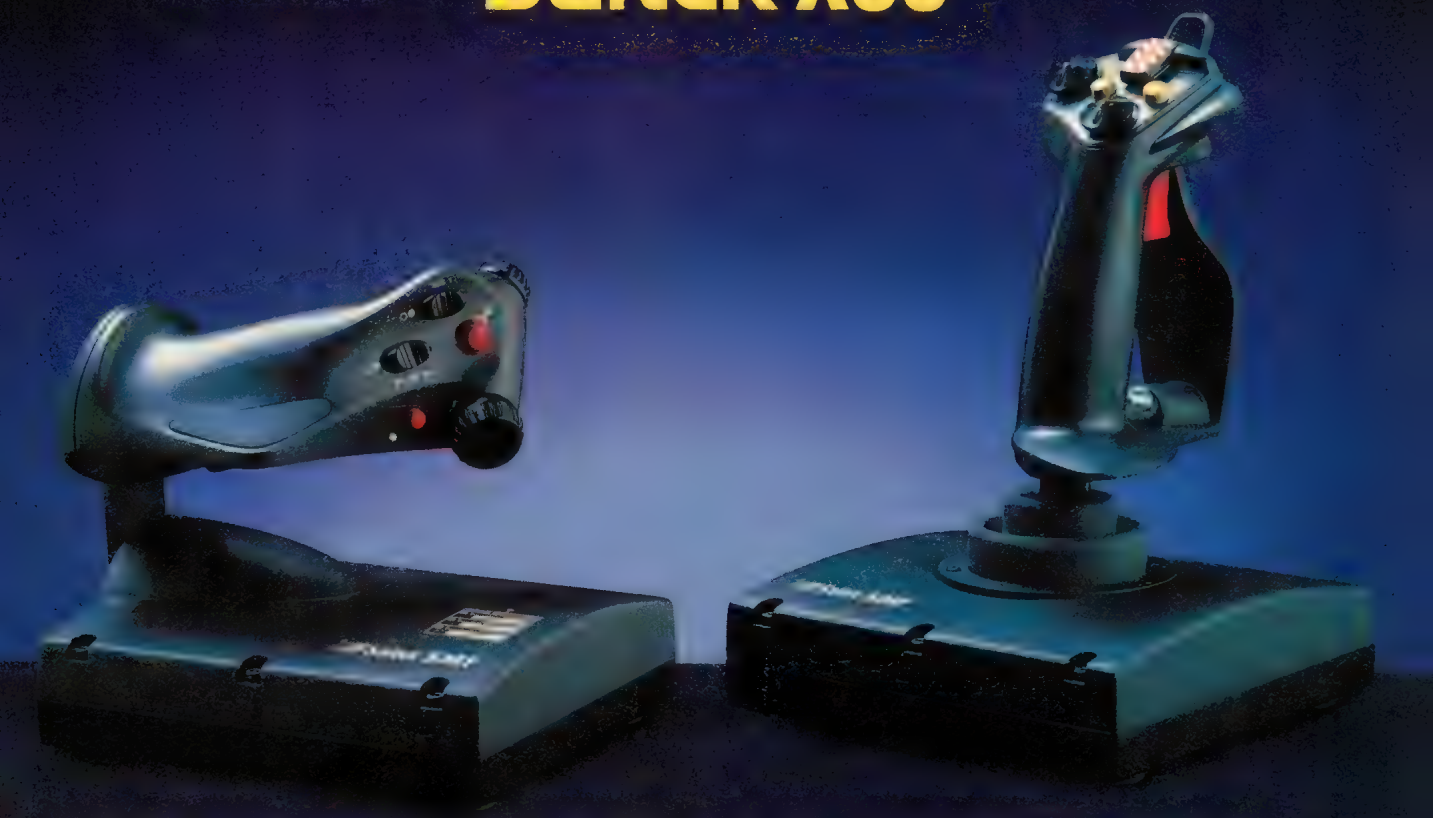
PC GAMER – THE VERDICT

An enjoyable platformer, if rather bland and derivative. That's enough *Lemmings*, thank you.

76%

EVEN BETTER THAN THE REAL THING

Saitek X36



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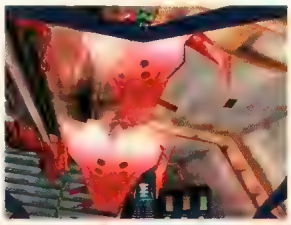
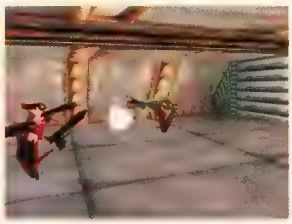
Terracide





Publisher	Eidos
Developer	Simis
Price	£40
Minimum System	P90, 16Mb RAM, Win95, x4 CD-ROM
Recommended	P133 MMX, 32Mb RAM, 3D card
Graphics Accelerator	3DFX, Rendition, PowerVR, D3D
Sound Support	Win 95 cards
Multi-Player	16-player network
Web Address	http://www.eidos.com
Release Date	Out now

Eidos descend into well-trodden territory with a 3D shoot-'em-up. But, ooh sir, isn't it gorgeous?

Look Mum, no pixellation! *Terracide's* undoubtedly one helluva looker, but it doesn't improve on *Descent* or its sequel.

Polished

"LOOKS AREN'T IMPORTANT." Who says that, eh? Usually the grotesquely ugly who are seeking some kind of justification for their unsightly appearance. Because as all of us right-thinking (and gorgeous) individuals know, the contrary is in fact true. Looks are terribly important. If they weren't, all the stunning girls wouldn't be taken already. Sniff.

And this logic extends to games. Some argue that the Spectrum and C64's efforts may look bad now, but still play better. Yeah? So why don't they shut up and carry on playing *Hungry Horace*?

> *"Little more than a* Descent *clone."*

I'll tell you why. It's because games like *Terracide* are coming along to show off what the PC can do when it's got a few sexy add-ons under the bonnet. Okay, so the add-ons you'll need to see it at its best are preferably 32Mb RAM, a P200 MMX and a 3D card; a not inexpensive little lot by any means, but you've got to upgrade sometime, so why not now?

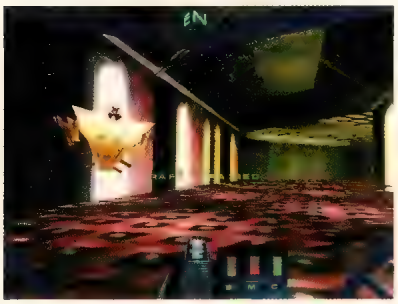
Unfortunately, though, the originality doesn't match the graphics, for behind the stunning veneer, *Terracide* is little more than a *Descent* clone. For those unfamiliar with *Descent* and its sequel, they were games which took the familiar first-person shoot-'em-up concept made popular by *Doom* and introduced full 360-degree movement. Piloting a spaceship, the aim was to destroy enemy constructions by moving through an interior maze of rooms and tunnels. On completing your goal you then had to escape before a timer ran out.

Terracide is fundamentally similar, although there's no final escape sequence and an unnecessary and brief *X-Wing*-style space combat sequence links the levels together.

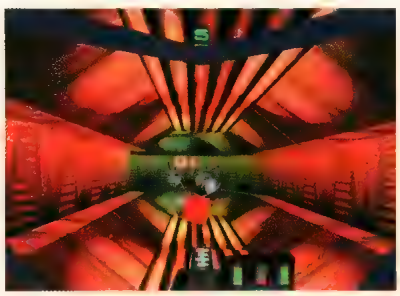
Initially it's tempting to be stunned into giving very high marks to *Terracide* simply because it looks so good. However, after playing solidly for days, you realise there is less depth to the actual game than there was to *Descent*. There are far fewer puzzles and objects to find, and the skill settings are a little too easy, which is sure to affect its long-term appeal. The selection of weapons is far superior to *Descent's*, with 20 to find and collect, while on a high-spec system, graphic details including spectacular explosions and reflective surfaces easily equal anything seen on a console.

A new objective every mission and radical differences in the textures and lighting provide just enough variation to keep things interesting, but the unforgivable omission of a map means that getting lost in the labyrinthine levels is all too easy and, in the long-term, very annoying.

Great graphics then, but *Terracide* isn't an improvement on *Descent II*. It looks no better than *Descent* on a similar card and doesn't play anything like as well. MATTHEW PIERCE



The textures and lighting effects are consistently impressive, just a pity the game's so derivative.



PC GAMER – THE VERDICT

On a suitably equipped PC, it's visually gorgeous. Its looks suffer on a lower spec system, but it's still fun.

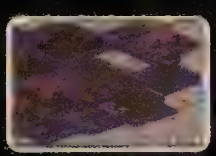
75%

IF YOUR GALAXY LACKS ATMOSPHERE...

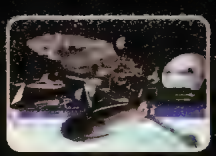
• DISCOVERY •

• ACTION •

• DIPLOMACY •



• STRATEGY •



• WAR •

Speedster

Publisher	Psygnosis
Developer	Clockwork Games
Price	£40
Minimum System	Win95, P75, 8Mb RAM, CD-ROM
Recommended	P100, 16Mb RAM, x4 CD-ROM
Graphics Accelerator	None
Sound Support	SoundBlaster or 100% compatible
Multi-Player	Two-player, split-screen
Web Address	http://www.psygnosis.com
Release Date	Out now

Not a dreadful racing game, just a rather dull one.

YOU CAN UNDERSTAND WHY games developers persist in developing racing games for the PC: so far, the definitive PC racing game has not been made; successful racing games (on other games formats) make shedloads of money and the person who finally comes up with a four-wheeled racing *Quake* will be able to retire to a Caribbean life unfettered by keyboards, mice and bizarre Windows error messages. You can see why no-one wants to give up trying.

But *Speedster* is just another ugly entry in the PC racing game freak show. Let's not get

"Woefully unengaging and anonymous."

things out of proportion – it's not terrible, fatally flawed or unplayable, nothing like that. Unfortunately, what it most definitely is, is woefully unengaging and anonymous. This is de-caffeinated racing for people who don't want to get too excited or involved. It's technically 'all there', it's just not that much fun.

The basics are sturdy enough. Eight themed tracks include an *Out Run*-styled Pacific raceway, a Brands Hatch-alike speedway and the ever present 'Arctic' (Canadian this time, actually), ice and snow fest. The best of the bunch, though, is

Race in proper cars or monster truck things.

Split-screen, the game doesn't slow down noticeably. However, it wasn't terribly quick to start with.

Turgid

Downtown, which has you racing through city streets, storm channels and motorway flyovers a rarely satisfying experience.

The viewpoint is the game's one claim to difference. A mixture of *Micro Machines* distance with *Daytona*-style out-of-car angle, gives playing the game the same sort of feeling you had when you were seven and pushing Matchbox cars around. Novel this might be, but it cripples the game in two rather important ways. First, it significantly reduces the sense of high speed excitement that racing games normally rely on. Being so far away from the car it's difficult to get involved with the proceedings on the track, never mind believe that you're clipping along at 100 mph.

Second, *Speedster's* overhead view means that the driver is completely reliant on the 'co-pilot' symbols that flash at the top of the screen. If you miss these, there's absolutely no telling where the approaching track is likely to lead – in scale view, you can only see about 75 yards ahead – making a full memorisation of the tracks irritatingly necessary. Of course, with a vastly reduced horizon, the scourge of most 3D racers – pop-up – is almost completely eliminated. However, if it was a straight choice between the sudden arrival of distant sections of the track and not knowing where the hell to go, it wouldn't be hard for most people to pick a winner.

With its strange view, then, real game speed is the one thing that *Speedster* can ill afford to lose. Unfortunately, on a Pentium 166, the hi-res mode is practically unplayable and the low-res hardly 'white knuckle'. In fact, it makes running through tar seem like a sport substantially in need of a crash helmet. When you couple this with other niggles such as over keen steering, overhead obstructions (such as bridges) that obscure your view of your car for seconds at a time, and sound effects created on a customised Stylophone, the old cost/fun analysis starts to look significantly shaky.

JAMES ASHTON

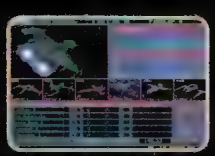
PC GAMER – THE VERDICT

'Safety racing' for people with heart conditions or an allergy to fun. Best avoided, eh.

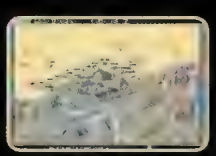
58%

GO GET ANOTHER.

IMPERIUM GALACTICA

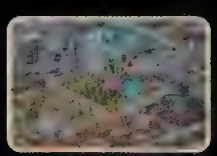


• DISCOVERY •

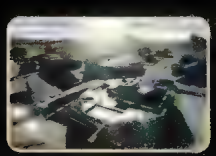


• ACTION •

• DIPLOMACY •



• STRATEGY •



• WAR •

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QAD

Publisher	Philips
Developer	Cranberry Source
Price	£40
Minimum System	486DX2/66, 8Mb RAM
Recommended	P75, 16Mb RAM
Graphics Accelerator	None
Sound Support	All major cards
Multi-Player	Modem, serial, network
Web Address	http://www.cranberrysource.com
Release Date	Out now

(Above) The graphics look positively Spectrum-like, with primitive, blocky sprites and messy explosions.
(Left) It's 3D *Defender*. Except that makes it sound good.

Who'd have thought that an obscure set of initials could disguise yet another 3D arcade game?

IT SEEMS TO BE THE HEIGHT OF fashion at the moment to name your game using a set of initials – the more obscure the better preferably. Thus we've seen *D, KKND, MAX, MDK* and *Z* all grace our PCs over the past year. Now the latest contender thrusting its three letters into the acronym arena is *QAD*, which apparently stands for Quintessential Art of Destruction.

Designed by Jon Ritman (best known for classic Spectrum games *Match Day, Batman* and *Head Over Heels*), the programmer's pedigree is not in question. The resulting game, however,

"The worst 3D engine I've seen for a long time."

suffers under close examination.

Basically, it's a 3D *Defender*-style arcade game, the aim of which is to rescue hostages from planets before your opponent does. To this end you use collection units called pods to pick them up. These you collect from a factory before dropping in the hostages' vicinity, whereupon they amble nonchalantly inside, apparently oblivious to the seriousness of the situation. From there it's a case of picking up the pod and returning the people to your base, where they run into your mother ship like lemmings led to an exit. Rescue three quarters of all the hostages and you're on to the next level. It's somewhat reminiscent of *Cybermorph* on the dear-departed Jaguar console.

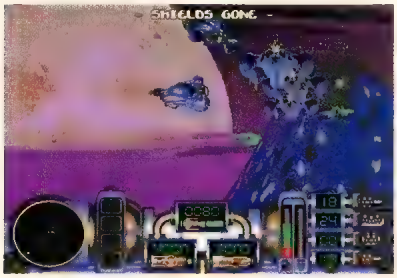
Your progress is hampered by a number of things, most notably an opponent who is doing exactly the same as you, and thinks nothing of nicking hostages from your base. Other enemy ships make themselves annoying and can be shot for power-ups, while a shop can be visited where you can purchase pods that have special properties.

The game is played over a planet's surface variously made up of oceans and mountains, and it uses the impressively titled 'ground control' 3D engine. To be perfectly honest, though, the graphics are appalling even in hi-res mode. They look terribly dated and although the terrain moves swiftly enough, the fogging is dreadful. *QAD* has the dubious honour of using the worst 3D engine I've seen for a long time.

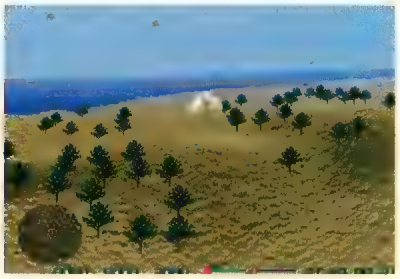
Fortunately, it plays better than it looks, but certain essential tactics detract from the game's basic objective of rescuing hostages before your opponent does. While there has clearly been a great deal of effort in incorporating many and varied methods of achieving victory, winning essentially boils down to this: steal the hostages your opponent has rescued and then, when you have collected more than him, simply kill all the remaining ones to ensure you stay ahead. Actually rescuing all the hostages yourself is made almost totally redundant and on later levels is certainly not to be advised at all. Much better to just hang around in a safe place waiting for him to do all the hard work before pouncing and nicking his. Much better, but really rather boring.

Playing against a human opponent is slightly more competitive, but because these thieving tactics still apply and hiding from your enemy most of the time is essential, *QAD's* uninstall program rapidly comes into play.

MATTHEW PIERCE



The terrain varies greatly from the blue sort...



...to the slightly more interesting green variety.

PC GAMER – THE VERDICT

A depressingly ugly 3D blaster which requires a lot less thought than it would have you believe.

55%

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"... the in-game graphics have to be seen to be believed."
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"This is a great game with an atmospheric and intriguing plot."
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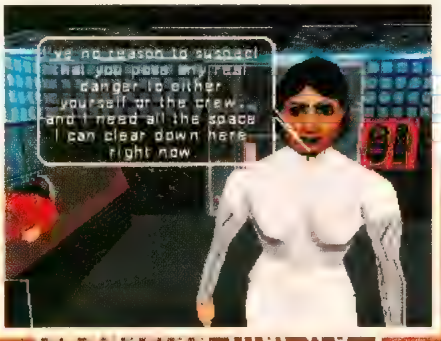
Sentient

Publisher	Psygnosis
Developer	Visual Sciences/Psygnosis
Price	£40
Minimum System	P90, 16Mb, SVGA
Recommended	P133
Graphics Accelerator	3D Blaster & Matrox Mystique
Sound Support	All major cards
Multi-Player	None
Web Address	http://www.psygnosis.com
Release Date	Out now


I've no reason to suspect that you pose any real danger to either yourself or the crew, and I need all the space I can clear down here right now.

You can see her point. Those speech bubbles take up loads of room.

You'd stand like this too if your head had been replaced by an orange (right).

The game that redefines the term 'Artificial Intelligence' – but oh, we wish it didn't.

OKAY, LET'S GET THIS OVER with as painlessly as possible. *Sentient* is an unmitigated disaster and the very last thing you'd expect an otherwise slick company like Psygnosis to release. It's a supposedly revolutionary RPG/adventure thing set aboard a mining station orbiting the sun. You're a medic called in to investigate the increasing number of deaths by radiation poisoning, but you also uncover an intriguing web of murder, gossip, mutiny, blah de blah. This means you get to wander back and forth down miles of featureless corridors finding confusingly named characters, asking them endless turgid questions and ferrying objects about.

The graphics are sub-*Quake*, slow and amateurish for the most part. The characters exhibit bizarre bodily tics when they talk to you in an effort to make them look more 'natural' and they generally have grotesquely disproportioned faces. The display is also hideously slow for such a relatively simple level of detail.

"It's the so-called AI which is the ultimate joke."

Don't be fooled, reader, it really is as dull as it looks.

But it's the so called AI which is the ultimate joke. It could more usefully be renamed Artificial 'Incompetence'. Yes, the characters talk to each other independently, but what they say is complete gibberish. Try this: "Hi." "How's it going?" "I think you need to work on your delivery. [Pause] I need a shower." "Hey, really?" "See you." "Bye." Not that we're suggesting there are just a few stock verbs and nouns that are randomly thrown together or anything.

For a game that boasts so much of its revolutionary 'intelligence', there are some serious flaws here. At one point someone asked who I was, so, of course, I slogged through the tiresome conversation engine to give the answer (submenu after submenu just to say "I am etc. etc.")... but no, that wasn't good enough. I'd obviously taken too long and the character simply asked exactly the same question.

At another point near the beginning (and no, I didn't finish the game), you're supposed to wait in a room till a doctor comes to see you and asks you to fetch a report. All very well, except that if you move outside the room into the corridor, she doesn't recognise you at all. Ask her what you should be doing, though, and she replies: "You could fetch that report I asked for." Uh? But she hadn't. Even better, if you then get the report, hand it to her, and repeat the question, she STILL tells you to go and fetch it. AI? Exactly.

So then, *Sentient:* bit of a waste of time, really. It's hard to see how Psygnosis got itself mixed up with this mess in the first place – it looks as if it's been released halfway through alpha testing. The kindest thing to do now would be to delicately gloss over the entire thing and never mention it again. So we won't.

ED RICKETTS

PC GAMER – THE VERDICT

***Sentient* is slow, confusing, sloppy, ugly and totally unoriginal nonsense. An insult to the intelligence.**

38%

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"The best space combat engine bar none."
92% PC Zone, May '97

Beauty is in the eye of the controller.

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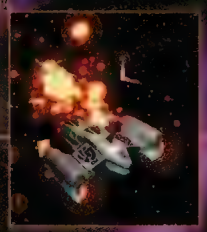

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Axelerator

Publisher	21st Century
Developer	Magic Bytes
Price	£35
Minimum System	DX4/100, 8Mb RAM, Win95
Recommended	P133, 16Mb RAM, x4 CD-ROM
Graphics Accelerator	None
Sound Support	All major cards
Multi-Player	Network and modem
Web Address	http://www.21stcent.com
Release Date	Out now

I think the title's a play on words. Y'know, because cars have accelerators and, er, axles as well. Maybe not, though.

Stalled

I'VE OFTEN WONDERED WHICH school of thought was responsible for introducing the regrettable marketing innovation of deliberately misspelling things. Does it take a specially trained team of designers weeks to decide on a suitable title, before deciding which few letters would be most effectively corrupted? And what purpose does it serve? Do Kwik Save sell more tins of beans than Quick Save ever would? I think not.

And I also think *Axelerator* isn't going to sell any more copies than Accelerator would have. And, more to the point, nor does it deserve to, because you shouldn't be fooled by this 'hard-sounding' title; *Axelerator* doesn't excel in either the driving or the violence.

"The car behaves like an unruly child."

The easiest way to describe it, apart from as a flagrant abuse of the English language, is as a poor man's *Carmageddon*. Another racing game in the age old tradition of smashing, ramming or just generally sabotaging your opponents' cars to leave you with a clear advantage. But what worked so well in SCI's outrageously violent offering (see review on page 76) is here rendered flat and tedious, largely due to the inferior graphics engine, poor car handling and sloppy front end.

Starting with a small budget, first stop is the parts shop, where car improvements and weapons can be bought. To begin with only a couple of offensive or defensive weapons can be added, from a choice which includes machine guns and wheel spikes as well as the more classy James Bond esque oil spiller.

Then once tooled-up it's into the race where a minimum of five laps must be completed against a number of similarly formidable rivals.

This isn't as easy as it sounds, though, simply because of *Axelerator's* annoyingly difficult car handling. From the very start the car behaves like an unruly child – tugging you in directions you don't really want to go without asking permission first. But if it's bad in straight lines, it's positively appalling on corners. Your vehicle doesn't steer left and right so much as drift half-heartedly. Before *Axelerator* I'd never played a driving game in which steering the car was designed to be a handicap. If only the combat could make up for the car's shortcomings, but, in keeping with the rest of the game, it's also entirely unsatisfactory. Firing the weapons gives you no discernible impression that you've hit anything or even produced any kind of threat to the other drivers.

The machine gun's aiming cursor, for example, cannot be moved, yet its fixed aim is higher than all of the opposition. The only way you score a hit then is if you're travelling down a particularly steep hill. Not a technique I remember Mad Max having to resort to.

If you have a real desire to merge violence with driving, then go out and buy *Carmageddon*. Or try to park in Bath. Just steer clear of this. MATTHEW PIERCE

The cars take the corners like juggernauts on an ice rink, while the combat is ineffective and pointless to the game.

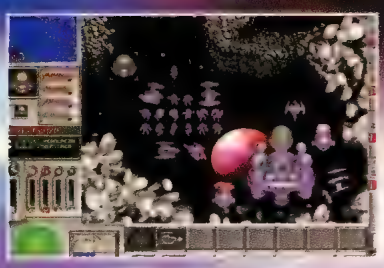
PC GAMER – THE VERDICT

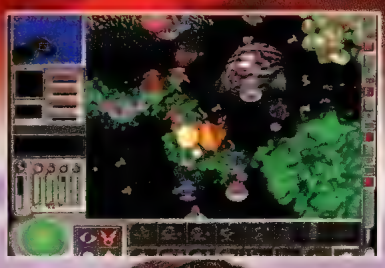
A sloppily put together *Carmageddon* wannabe. Looks average, but plays significantly worse.

45%

STAR COMMAND™

REVOLUTION





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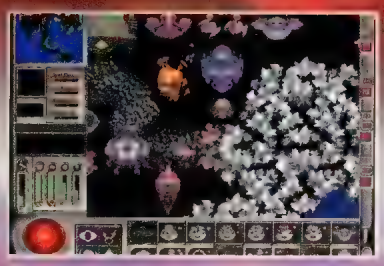

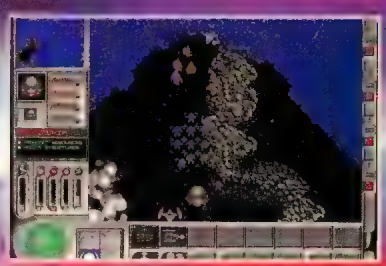

GT Interactive Software (Europe) Ltd.
The Old Grammar School,
248 Marylebone Road,
London NW1 6JT
http://www.gtinteractive.com

PC CD-ROM

METROPOLIS

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Cavewars

Publisher	Eidos
Developer	Avalon Hill
Price	£40
Minimum System	486DX/33, 8Mb RAM
Recommended	P90, 16Mb RAM
Graphics Accelerator	None
Sound Support	SoundBlaster compatibles
Multi-Player	Five-player simultaneous
Web Address	http://www.eidos.com
Release Date	Out now

(Right) Combat. The dullest part of the game. (Below) The graphics look okay until you realise there's no animation or variety.

An underground network of dark, dingy rooms linked by smelly corridors. The night-clubs of Bath? No, *Cavewars!*

THE RECENT SPELL OF SPRING sunshine has transformed the GAMER team. Steve's reaped the most rewards – his window seat gifting him a bright red face that he assures us will turn brown given time. Most importantly, though, every male member of the team has been feeling slightly hot under the collar since Bath's admirable collection of young ladies took to walking past the window in various states of undress.

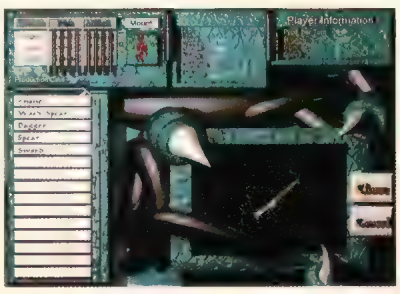
It came as welcome news, then, that *Cavewars* offered the prospect of dark, moist subterranean caverns in which to shade our sweaty, twitching bodies. Unfortunately, as much as I wanted to enjoy the experience there are simply too many niggling glitches that make the whole process of playing *Cavewars* a frustrating one.

A turn-based strategy game, *Cavewars* begins by offering you eight races to choose from, before your castle appears in a randomly generated cave. Like almost all games of this genre your livelihood immediately depends on the mining of metals and ores for the manufacture of weapons and defences. However, unlike games such as *Dune II* or *C&C*, where mining is a process of clicking on a harvester or truck and pointing it in the direction of the ore, *Cavewars* is unnecessarily fiddly. For example, first you must build your engineer before travelling to the ore, drilling through the rock, and finally mining it. Logical, but the whole process can take around 20 turns and needs to be repeated endlessly.

> *"Combat itself isn't turn-based, making retreat an impossibility."*

So it's with a slowly increasing stockpile of materials that you start to amass an army, improve weaponry, and armour, and eventually get around to going to war. This proves no less arduous a task than mining was, though, as all your fighters have to be placed on the same square before they can form a unit.

For no good reason, combat itself isn't turn-based, making retreat an impossibility.



There's no animation as the sides slide along to meet in the middle and begin nudging each other in what looks like a schoolyard scrap. Additionally, magic spells can be researched – a list which includes such gems as 'Summon Giant Turtle' and 'Sherburn's Small Scry'. Hmmmm.

The cave networks are huge and three dimensional, meaning it's possible to drill into the ground as well as through the roof to enter other caves, but this process simply confuses matters, with your men getting lost on different levels. Jerky scrolling and a tiny main window were the final straws that broke *Cavewars'* back for me. I returned to the surface, blinking hard and moving toward the window in the hope of finding some more interesting and original games to play.

MATTHEW PIERCE

Collapsed

PC GAMER – THE VERDICT

Shoddy graphics and an annoying control system ruin what could have been an okay turn-based strategy game.

58%

BABYLON 5

at

GAME

Available to own on video

12th May

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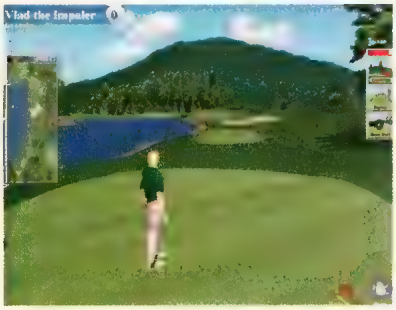
Sierra Sports: Golf

Publisher	Sierra
Developer	In-house
Price	£30
Minimum System	P90, 16Mb RAM, Win95
Recommended	24Mb RAM
Graphics Accelerator	None
Sound Support	Any Win95 card
Multi-Player	Modem, network or Internet
Web Address	http://www.sierra.com
Release Date	June



Vlad the Impaler, the famous English golfer and all-round good egg, watches another astounding shot.

No, don't listen to them. I'm not sick of playing golf games on my PC at all. I still love them, and still welcome the latest *Links LS* challenger.

Swing

NOW THAT THE SUNNY months are returning, it's almost tempting to toss my PC to one side, skip outdoors, over to the local golf course and bang a few spheres of pimpled rubber and 'explosive element' around some semi-natural fields. There are two reasons why this won't happen, though. First, I can't play golf. Second, the local golf course won't be too welcoming should I return, not after I took my nephews (dreadful bunch) up to the main bunker on hole 17 with a bucket, spade and bottle of weed killer.

Phew! then, that, instead, I can potter around three virtual golf courses thanks to yet another simulation, this time from Sierra. I've even managed to come up with quite an attractive looking 'action' thanks to the included 'TruSwing' thingy that uses gentle mouse movements to simulate back swing, follow through (not the pavement pizza type) and even draw and fade. And all the way through, your polygonal player in the pretty pants is superimposed over the most attractive of worlds.

Now we all know the kind of competition these recent golf games are up against, and since I had the pleasure of rewarding *Links LS* with its super high mark all those months ago, so it is up to me to measure its slick superb ness against the up and coming *Links* beater wannabes. The problem we are having here, though, and I think I might have mentioned this in the *Jack Nicklaus 4* review, is that most games companies seem to be missing the reason why *Links LS* scored *so* well (94% if you weren't reading PC GAMER then). It wasn't because it had every single conceivable feature in the world (no mouse swing system; no course designer; no instant screen redraws), but because the whole game *felt* so good. It was exceptionally slick under both DOS and Windows 95, easy to get going, easy to pick up and play, but with plenty of challenge. Oh, and the graphics were unbelievably good.

Sierra Sports: Golf is the nearest of the current bunch, but still isn't quite there. The

I really rather fancy my chances on this par three. Putting is damned difficult, mind, so a hole in one would be best.

ing

game only supports Windows 95, so you are stuck with the standard (and to be honest, pretty ugly and clunky) Windows 95 style boxes and prompts. *Links LS* created its own look, and was all the better for it. The main problem is the way Win95 insists on pausing whenever it tries to get at some new information (a real problem with *SS: Golf* if you have 16Mb of RAM). Sierra have tried to squeeze bags of atmosphere into the game, so that if you pause, there are sound effects of birds, lawn mowers, planes going overhead, or comments from the players stacked behind you, which, theoretically and on a 32Mb PC is to be encouraged. But if you just wait for the hard drive to stop whirring, it continues to play something new. Hence, if you decide to play the more traditional tri click shot (click-click-click with the mouse, like *PGA*) the pauses upset your timing. On a 16Mb PC I wasn't able to play a single good shot using tri-click. Thankfully, the TruSwing doesn't suffer this way, as you can control the pace of the shot. Click the mouse to start your shot, the game shuts its mouth for once, and *then* you can start your swing.

> *"It really is the TruSwing system that helps get this high mark."*

The polygonal bloke takes some getting used to if you're familiar with a nice digitised overweight Arnold Palmer, but it works well. It actually mirrors the exact movements of your mouse, so you can see if you are about to hook and correct at the last moment. It's even possible to unbalance your character and have him fall over. It really is the TruSwing system that helps get this high mark, so bear that in mind if you are planning to just go for the tri-click method.

Graphically, the game looks very nice, with a range of different views and reasonably fast screen redraws certainly faster than *Links LS*. The three courses offer different challenges, with plenty of water, trees and bunkers positioned just where your ball ends up landing.

It's still not as good as *Links LS*, which runs considerably quicker in DOS mode on a comparable PC, but it is two thirds of the price. There's a range of multi-player modes, including a seamless Internet option that connects to Sierra's challenge site so that you can take on anyone over the world. Give this month's demo a go to see if you get on with the TruSwing, because it's definitely worth a round or two if you do. STEVE OWEN

PC GAMER – THE VERDICT

A worthy opponent to *Links LS* that wins on some counts, loses on others, but it's a battle worth watching.

86%

Air Warrior 2

Publisher	I-Magic
Developer	Kesmai
Price	£40
Minimum System	486DX/100, 16Mb RAM, Win95
Recommended	P100, CompuServe account
Graphics Accelerator	None
Sound Support	All Win95 cards
Multi-Player	Modem, CompuServe, (AOL soon)
Web Address	http://www.imagicgames.com
Release Date	Out now

Through some strange temporal vortex, we've been whisked into a flight simulator that must be five years old.

This isn't the Earth from eight miles, but *Air Warrior 2's* representation of a few islands in the Pacific.

Flighty

THE ORIGINAL *AIR WARRIOR* has a bit of history. For the last five years, Americans and a few other people around the world have been doggedly shooting each other down on-line, and the game has certainly achieved a classic status. I-Magic aim to bring the idea to a wider audience through the commercial release of version two.

For your money you get over 100 single-player missions covering three wars – World War One (as Allies or Hun), World War Two (ditto) and North Korea (the locals or the US), and the option, for now, to play it sort of for free on-line against up to 100 other pilots. It's 'sort of' for free, because you have to (currently) belong to CompuServe to play version one, which costs at least £6.50 a month for five hours before telephone charges. Or you can belong to AOL and play the more basic *Air Warrior* for about the same price. But make the most of it quick, as you are going to have to pay even more in the near future – complete details aren't available at the moment.

This is the more useful, but even less attractive, half-screen view. You get all the cockpit instruments here.

The multi-player aspect, as you would expect, does come into its own. There is so much feverish excitement in shooting down some poor sap in the US. It all goes a bit wrong after a while, though, when you find that you're flying against people that are not only real-life pilots, but they've also played the game for five years and are considerably better than you. This isn't jet warfare where you know where they are, where the missile is and can try to avoid it. Unless you keep your eyes peeled so hard they bleed, someone will sneak up on you and shoot yer down like a dog... a flying dog, maybe.

So practise your hardest on the single-player missions, if you can stomach the terrible graphics; flat, featureless, untextured landscapes, with occasional pyramids for hills jutting out like teenage acne. Any excuse can be made for how simple it needs to be for on-line play (but even so, what about *X-Wing vs TIE Fighter?*), but why not smarten things up for the single player? The flight model is spot on and, judging by the worldwide following, certainly ought to be, and flying the huge number of aircraft (also detailed in an electronic encyclopaedia) certainly feels natural and comfortable. Perhaps we're just spoilt these days, but *Air Warrior 2* looks embarrassed next to virtually any flight simulator developed in the last 24 months.

"Someone will sneak up on you and shoot yer down like a dog."

But it's still the only true, accurate flight simulator that so many people can play on-line simultaneously (although there's no Internet option). It's simply questionable as to whether someone with considerably less skill than the 100 Red Barons that are currently there will gain much benefit for the outlay involved.

STEVE OWEN

PC GAMER – THE VERDICT

Hideous looking but accurate flight simulator; some fun on-line, but far too outdated for the single player.

61%

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The X-Miles

Europress £15

It's more tracks for *Network Q RAC Rally Championship*, in case you were wondering.

It was the first time the Australians had entered the Network Q RAC Rally, and they were determined to try something different.

INVESTIGATING PARANORMAL activity within the misty forests of outer Vancouver and driving souped-up Skodas through the damp mud fields of North Wales have so much in common. How natural it is, then, for Europress to use a cunning play on words in naming this add-on selection of tracks for their *Rally Championship* game. It means that if you enjoyed the original BBC series but buy this box by accident, you won't be disappointed because you probably like rally driving too.

What the hell am I going on about?

A split-screen mode; extra detailed SVGA graphics; a host of new cars; a track designer; new, improved speech and sound effects; Internet tie-ins to reflect timings of the real drivers; fantasy courses with ramps and loop the loops; free invitation for a night out with Helena Christensen. All of these things could and should have been included in the *X-Miles* add-on, but sadly weren't. Instead, ten new tracks have been stuck together into a new trial, which, as ever, looks absolutely fantastic in maximum detail SVGA.

There's the usual tarmac tracks through bumpy countryside, small rivers of water to bounce over, dirty rough tracks between rocky ravines and even a desert route, including two totally sanded stretches that reduce your car to a crawl if you haven't set the thing up properly.

"Free invitation for a night out with Helena Christensen."

The new courses are accessible through two different modes of play. Arcade *X-Miles* takes you through from the first to the last, where you must reach each checkpoint on the ten courses within the strict time limits allowed. If you want to see the others, though, pop along to the time trials section and select them individually. Like before, this gives you a free run on the track, just giving you an indication of how fast you are compared to the rest of the pack.

These are good, varied, challenging tracks, but considering *Championship* already contains 30 quality races, does it need kick starting with even more?

STEVE OWEN

PC GAMER – THE VERDICT

On their own merit, these are good tracks. But when there are so many in the original, do you really need a load more?

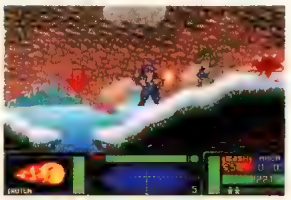
70%

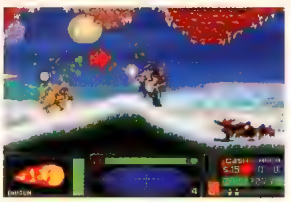
Zombie Wars

Sprint Software £30

A long time ago, when PCs were first finding their way in the big bad world of games, Apogee gave the fledgling machine numerous helping hands in the action department. *Halloween Harry* was a fairly fun platform romp where Harry ran around numerous, similar, maze-like platform levels rescuing hostages who had been stashed in the most unlikely of places by switching switches and killing cartoony zombies. Before finding the exit and doing the same thing again. And again.

Anyone who played *Halloween Harry* will know exactly what they are letting themselves in for, because this is identical in every respect bar two: first, you no longer have to rescue hostages, giving a more varied and slightly less frustrating gaming experience; second, the flamer is missing, replaced instead by the photon, which is a bad thing.





Having quite enjoyed finishing the first game, I was interested to see what Gee Whiz would do with the licence. The result is a disappointing re-run of its predecessor, with only a few cosmetic changes to try and hide the fact. This is an average platform game, executed fairly badly. For example, there is the challenge involved in flying up to and landing on a platform, the random and sometimes awful placing of enemies, the lack of terminals available to spend your hard fought for dosh at and... what's the other thing... oh yes, the way that it becomes mind-numbingly tedious after a while. Here we have a highly conservative and flawed game that next to *Sonic* and *Pandemonium* seems desperately dated.

JON HYDE

41%

Actua Soccer Club

Gremlin £40

The term 'flogging a dead horse' has no meaning to me.

ALTHOUGH *ACTUA SOCCER* AND *Euro 96* both looked better than any of the other 3D football games, and considerably better than *Sensible World Of Soccer*, they tended to play (as far as this reviewer is concerned) like a heaped pile of skid-marked pants. Now when you re-release a game over a year later and just update the teams, some things change, some stay the same. The graphics in the *Club Edition* are now slightly less awesome (although still very good, and definitely retain their edge over *Kick Off 97* and *UEFA Champions League*), but it still plays terribly. The biggest problem is the one-touch system that was introduced on the PC in *Euro 96*. When you lob a ball towards a front man, his little indicator (a circle without the ball, a triangle as you dribble) turns into a flashing star. From this moment onwards you can plan a first-time touch, such as volleying at the goal, crossing through the box or passing onto another player. On paper this was clearly an excellent and unique idea. But in practice it translates as an extremely frustrating process, where you feel that you are watching the match rather than controlling it. While the star is flashing, the computer controls where your player will run – usually running on or standing there and waiting for it, when, frequently, what you really need is for your player to come and collect the ball. Because that's exactly what the computer's own players do, which means that they intercept virtually any long ball attempt. It ruins the flow of the game.

But then, because of the seriously slow motion capture technique, where every single muscle flex is slowed down so you can see *just how accurate* it all is, there's very little flow anyway.

These are the same, uncured problems from *Euro 96*. Perhaps they didn't listen, or maybe I'm the only one that can't get to grips with it. Even if you loved the original, you'd be a bit barmy to pay another £40 just for Premier League team and player biographies. It's very difficult to recommend, it still has its buggy quirks in there, but, like its predecessors, there are bound to be some fans out there.

STEVE OWEN

"There are the same, uncured problems from Euro 96.*"*

Spot the *Actua Soccer* grabs? We couldn't grab the *Club Edition* and Gremlin didn't get round to sending us any new ones.

PC GAMER – THE VERDICT

The horse Gremlin are flogging still looks a proud beast, but it's crippled. If you see what I mean.

62%

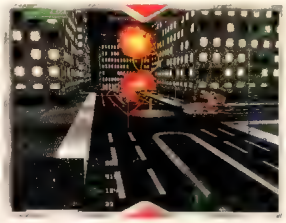
Helicops

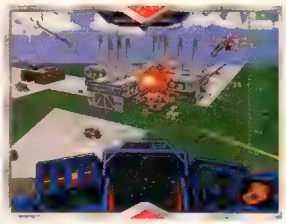
7th Level £25

This is 7th Level's finest gaming moment for many a year. Following a few disastrous attempts at providing gamers with any pleasure whatsoever (*Arcade America* and *G-Nome* spring most readily to mind), *Helicops* hopefully represents a turning point for the beleaguered company.

In the near future, an earthquake has destroyed Tokyo. The imaginatively named New Tokyo emerges from the rubble, but, surprise, surprise, by 2015 there is trouble. Crime syndicate boss, Maxwell Giger, is causing as much mischief as he can after the assassination of the nice president, Governor Koyo. Only the late Governor's secret law enforcement group, the HeliCOPS, can prevent the end of civilisation.

The game is a pleasantly simple affair: all you need is a joystick, a very itchy trigger finger, a copy of Windows 95, and a very fast PC. However, if you have all of the above, prepare yourself for a leave-your-brain-at-the-door blasterama. From the start, once you have worked out how to use the radar, you will be flying through pleasantly different-looking levels, with occasionally different objectives, populated with the same enemies, laying waste to all and sundry.





However, this is not as bad as it may sound. Imagine the gung-ho nature in *Virtua Cop*, *Afterburner*'s pleasant disregard for reality and *Desert Strike's* slight strategy element, and you won't be far off. The idea may not be new or particularly enticing; the execution, however, will give many hours of thought-free entertainment.

JON HYDE

77%

A message from the founder of Maverick Computers – Greg Christie:
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Processor: Allocate most of your budget to the fastest processor – the faster your processor, the faster your games/applications will run!!
Memory: Don't buy less than 16Mb – Windows95® needs this as a minimum to run properly, especially when multi-tasking.
Video Card: Never buy an obscure card – even though it's cheap, only buy well known brands, else you may find your software will not support your card and your game will not run properly. We suggest a 3D card – the new games out now that support this will run faster. Also, 2Mb of memory as a minimum to ensure you get the maximum number of colours from your software.
CD Drive: Some games like Rebel Assault II run from CD ROM – if your CD drive is slow, your games will be equally slow!!
Hard Drive: Spend what money you have left on a large enough drive, else you'll be sick when you see that message "Drive C Full".
Monitor: If you can afford a larger monitor you will really appreciate how much better your gaming experience becomes – it really does make a BIG difference. Once you have used a 17" or 21" you won't understand how you ever managed with that old 14" hack. For Windows multi-tasking, BIG is a must.
Speakers: Don't be caught out by cheap 'tinny' speakers (especially battery powered) we only use quality sounding, mains-powered units. "The Labtec LCS 1022 sounds awesome" - see PC Gamer review, Jan 97 issue 39.

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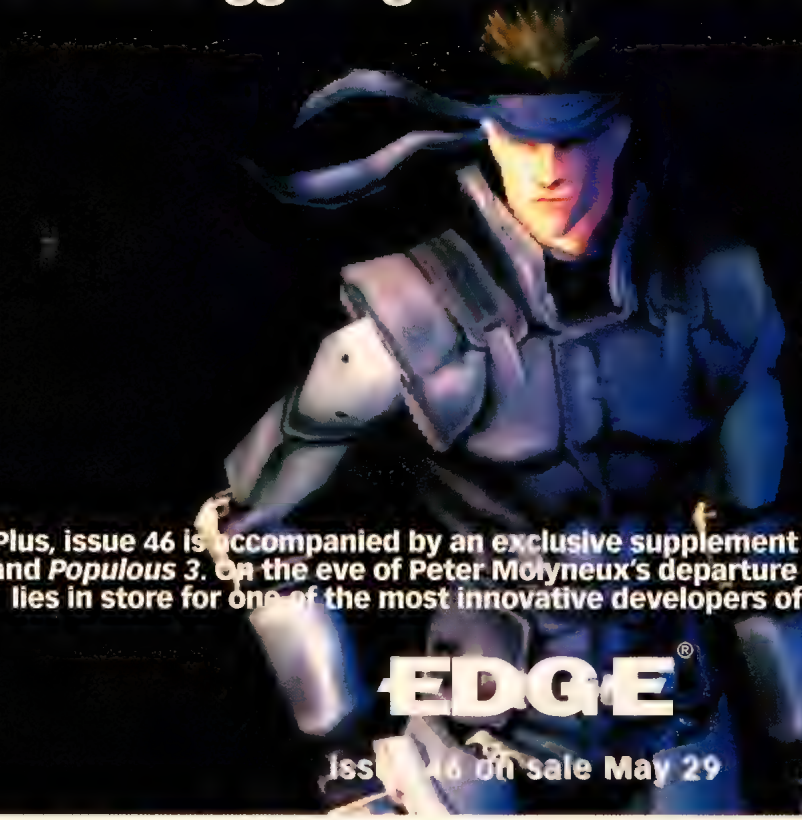


Inside Edge 46:
Metal Gear
Rascal
Psybadek
F1 97
Tobal 2
Colony Wars
Overboard
Crash Bandicoot 2
Alien Earth
Starfox 64
Dungeon Keeper

Plus, issue 46 is accompanied by an exclusive supplement examining Bullfrog and *Populous 3*. On the eve of Peter Molyneux's departure Edge reveals what lies in store for one of the most innovative developers of the past decade.

EDGE®

Issue 46 on sale May 29

Image from Konami's *Metal Gear*

(Above) Tonight, Matthew, I'm going to be a small blue thing.
(Inset) The terrain often turns into black panels for no reason.

Reloaded

Gremlin £40

Oh, how we laughed when we loaded up *Reloaded*...

LET'S GET THIS STRAIGHT. *RELOADED* is the sequel to a game called *Loaded* which never appeared on the PC but was a huge hit on the PlayStation. Still with me? The game was a cross between those classic arcade games *Robotron* and *Gauntlet* – a top-down, fast-paced shoot 'em-up with gorgeously detailed graphics.

The task of describing this sequel, however, is not a job I relish at all, because the first thing you feel after playing *Reloaded* for five minutes is disbelief. Normally the GAMER team only crowd round a PC to stare at a truly fantastic game. They crowded around *Reloaded* simply to sympathise with me. Like the original, you take control of one of a selection of bizarre characters who you must guide around various landscapes (again viewed from above), searching for various objects, while simultaneously fending off a constant stream of enemies with guns and smart bombs.

So far, so derivative. Regrettably, though, *Reloaded* has gone horribly wrong. The pseudo-3D engine and parallax scrolling, which attempt to bring a little depth to the dreary, uninspiring desert planet landscapes, are appalling. Moving alongside a wall produces horrendous black blocky glitches which flicker on and off as your character walks along at a painfully slow rate. It honestly had me questioning whether the game was really finished or not.

Even worse, all the sprites are dull and ill-defined – grey and brown 'natives' swarm round you in a drab kaleidoscope against which even John Major would appear positively garish, while the terrain is

"It had me questioning whether the game was really finished."

unimaginative and the collision detection awful, often getting you incurably stuck between bits of landscape and forcing you to reach for the quit button (not such a great loss). Don't even think about using the SVGA option either, which runs so slowly you'd think you were playing it on a 286.

It's fairly common knowledge that Gremlin are planning to float on the stock market later this year. Releasing pap like this in order to boost revenues beforehand is a cynical move that will win them few long-term favours and does little credit to the excellent reputation they've re-built during the last couple of years.

MATTHEW PIERCE

PC GAMER – THE VERDICT

We laughed at *Reloaded* because we didn't pay for it. Purchase this in a shop and you'll cry yourself to sleep.

39%

Dragon Lore 2

Cryo £35

The original *Dragon Lore* was, for all its faults, quite a compelling game. Although it took only an evening to belt through from start to finish, Cryo's efforts to create a fantasy story-line and pack it with tasks was admirable. The second game sticks to the same approach and, while it is slightly more heavyweight, it still suffers from the same playing flaws as the first.

There has always, for reasons which escape me, been a school of gaming which enjoys *Dragon Lore 2's* approach. It works like this – you have a first-person view which looks at a gorgeously pre-rendered world. If you want to go somewhere, you just move your cursor onto one of four positions (north, west, south or east... unless for some unexplained reason, you can't go one of those ways), click, and wait as you walk forward a few paces, and then stop.

It's a boring way of navigating. That's not to rubbish these types of games as a genre but rather to point out that to succeed

in today's action-packed PC market they need something else that's special. Unfortunately, *Dragon Lore 2* doesn't have anything else. You are a young would-be Dragon Knight who, unfortunately, doesn't even have a dragon. To make matters worse, another rather nasty knight won't let you become a knight until you get your dragon back and beat said knight in combat. But things aren't even that simple: the Archmage also has a rather interesting adventure for you involving the well being of the whole valley in which you live.

As you'd expect from Cryo, the graphics are really very nice indeed. Combined with the rousing musical score, flickering torches, glowering mystical beasts and you have a lovely atmosphere. The snag comes when you look at the puzzles (which range from laughably basic to the adequate) and the dialogue (that never really grips you like the visuals). And, let's face it, these are what these games are about.

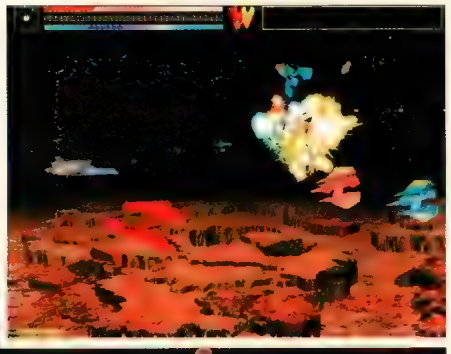
JON HYDE

59%

Katharsis

Metropolis £TBA

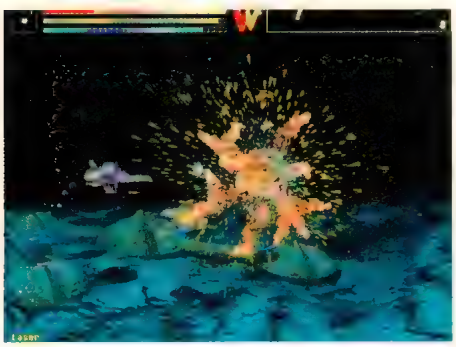
Not a foot disease, but rather a gorgeous-looking shoot-'em-up.



It may look beautiful and move like a greased bullet, but *Katharsis*' design flaws make it just too difficult to ever be a fun game.

A FEW YEARS AGO, A COMPANY called Atari released a new console. Named the Jaguar, its software, or rather lack of software, proved to be a big part of its undoing. One such lacklustre title was *Crescent Galaxy*, a beautiful shoot-'em up which unfortunately fell down by being immensely frustrating and badly designed. Looking at the undeniably fantastic graphics in *Katharsis* and bearing in mind what I have just said, you may well suspect what follows.

From the smashing-looking intro sequence, the scene is set: a colonising spaceship is launched from Earth but all contact is lost and you end up in a ship at the bottom of an ocean. What, you may well be thinking, am I on about? I wish I knew, but that, according to the spinning ships and useful text that set the scene, is it. Anyway, the plot is, of course, completely irrelevant in shoot-'em-ups – shame, then, that this is one of the game's higher points.



Its low points start with your ship, which is fairly slow, cumbersome and capable of flying only halfway across the screen for a good deal of the time (there are two types of level, one of which mysteriously doesn't employ this crippling flaw). This gives you an almost unrivalled lack of space and mobility with which to avoid the thousands of missiles and bullets which inevitably speed towards you. If this was the only problem, then it might still score in the 'good but flawed' department. Unfortunately, the splendiferously fantastic explosions and weapons are all well and good, but the constant Guy Fawkes display makes it very easy to miss things you need to pick up. Like missiles. And when you take into account the terrifying playing difficulty, tediously similar levels and impossibly sparse and quick-to run-out weapon power-ups, things begin to look very grim indeed.

JON HYDE

PC GAMER – THE VERDICT

Good graphics do not, yet again, a good game make. Or even an all right one as far as *Katharsis* is concerned.

48%

Silent Hunter Patrol Disc 2

Mindscape £15

Including the trigonometric sine law in a computer game's rulebook should guarantee disaster. *Silent Hunter* (PCG 31, 88%) confounded this theory by being the most thorough and absorbing submarine simulation I have encountered. Set in World War II, you command a variety of US subs in the Pacific. Your objective is simple: destroy as much Japanese shipping as possible in a series of single missions or in the campaign mode.

Successful submarine warfare relies heavily on remaining undetected for long periods of time, tracking the enemy and manoeuvring into position for that all-important first shot. This doesn't make for instant gratification, but perseverance is well rewarded. Those amongst you who have persevered will be glad to see the arrival of a second expansion disc. On offer this time are two

new patrol zones, Hong Kong and Vietnam, plus fifteen scenarios. Most importantly, a scenario editor has been included, which manages to be both comprehensive and friendly. Having owned an early version of *Silent Hunter*, I was also pleasantly surprised by the version upgrade which is on the disc. This provides new Photo Recon and Lifeguard missions, plus sub versus sub combat and a host of improvements, notably to the AI and time compression.

My only complaint with the *Silent Hunter* series as a whole is that you can only control US subs. For some strange and probably perverse reason, I yearn just for once to play a game that allows you to blow up Americans! I had hoped that the scenario editor might provide this option, but it was not to be. Perhaps Patrol Disc 3 might one day come along and rectify this situation.

JASON WESTON

72%

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PC Home

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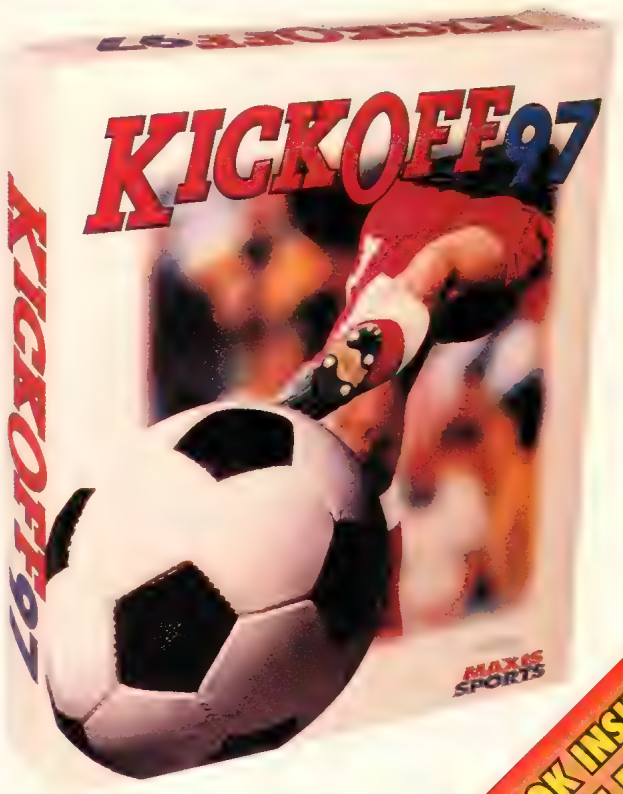

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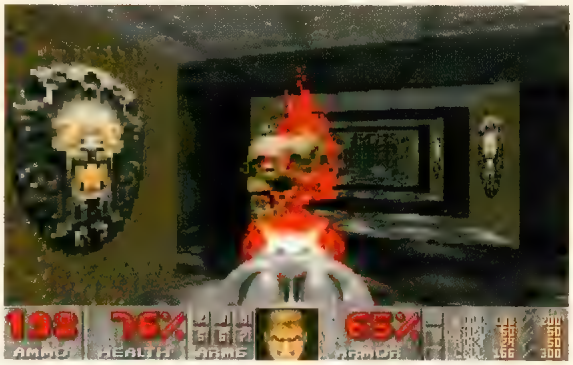
They're back!

It's a *Doom*-tastic month, with GT happily popping out all their *Doom* clones on budget. Good for them. And there are some other re-issues too.

1 ULTIMATE DOOM

GT Replay £15



If you aren't too sure what is so ultimate about *Ultimate Doom*, then it was, to be honest, a last flog of the horse before it turned its hooves towards the sky and snuffed it. *Ultimate Doom* is the full registered version of *Doom*, but with the added luxury of an extra chapter, as designed by Id people on the periphery of the original team. And clearly the influence of the first three chapters has rubbed off on the newcomers, perhaps causing some chaffing. The fourth chapter is top notch – necessarily harder than the first three chapters, but not so hard as to cause gnawing of teeth (see *Doom II* on the right).

There's none of the huge extra enhancements found in the proliferation of Internet levels, such as new front ends, monsters, weapons and sounds, but it also oozes some quality, which was a very difficult phrase to utter truthfully about most stuff from the Information Superpathway.

But pushing the extra level to one side, let's just consider the game that forms the basis of 'Ultimate' *Doom*. Of course, history dictates that this is perhaps the most well known game of the '90s. In fact, it is probably one of the best known and most played home computer games of all time. It is certainly one of the few games that can be just as entertaining whether played on your own, or blasting away chums. And since this is now the registered version, you can also incorporate all those hideous Web additions.

At this new reduced price, you can justify buying a modem and taking on a friend. I remember the days when, etc... and other fond tales of evenings filled with the tortured anguishes of hearing my Dooming contemporaries suffering at the hands of my blasting shotgun.

Superb level design and superlative game design combine to create one of the simplest yet most fearfully addictive games ever created. The technology may have brought about the 'wow' factor at the time (and be a little less impressive in the shadow of *Quake* today), but now it is the sheer speedy enjoyment you get from charging around all over again. An absolute classic that you must own.

STEVE OWEN

89%

2 DOOM II

GT Replay £15

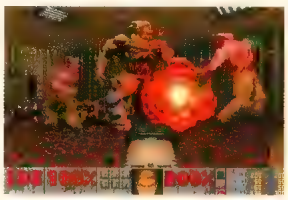
Well, it's *Doom II*. What more can I say? Few other games have received the same amount of praise and controversy in almost equal measures than this bloodbath by Id. A classic in its own lunchtime and for quite a while afterwards, *Doom II* met with a mixed response upon its release in October 1994. But time waits for no man, and two and a half years is a lot of time.

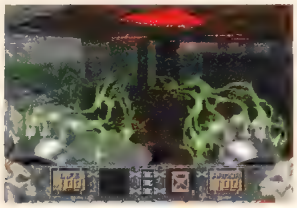
Comparing it with newer titles, like *Hexen*, *Duke 3D* and, obviously, *Quake*, leaves it severely wanting in the graphical stakes. On this basis, many would now give it a score of around the 50-60% mark, saying that it was a classic game which has aged badly; buy *Quake* instead. To a degree, I believe that to be true, but, especially given the price, I think that reviewing it in direct comparison with today's titles is unfair. Obviously it can't compete technically or it wouldn't be on budget. Instead, I would encourage you to look at the fiendishly ingenious level design, the classic sound effects, an atmosphere so intense your fingers often physically leave the keyboard with fright, and the countless levels which have been made by its many fans. When you take these things into account, along with the price, you could well end up with a game which leaves its modern day counterparts lacking.

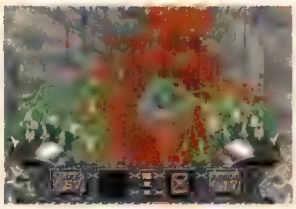
Although I personally prefer the more lived-in feel of the original, if you don't own the game already, you would be missing out on a treat if you left this on the shelf; it is far more deserving of your cash than some of the full-price games out there. And few multi-player maps have ever been as perfect as the very first level.

JON HYDE

86%







3 HERETIC
GT Replay £15

We've just had a bit of an argument about this one in the office, with me being the lone voice of reason, but also being the one with the last say. *Heretic* was the first official game to use the *Doom* engine but to be developed by a third party. Raven – who followed up with the astoundingly good *Hexen* and will soon present us with the eagerly anticipated *Hexen 2* (which uses a modified *Quake* engine) – fiddled around with Id's original engine design to come up with something a little more flexible. In *Heretic* you can look up and down (useful when you get to high windows overlooking courtyards full of things to be shot, or when standing by very steep stairs), keep an inventory of things that can be used later, and even fly, when equipped with special boots. Add to this a sparkling set of atmospheric spot effects (ahh, remember the first time you fell into some water?) and, to me, this was a special game that created something suitably different to the original *Doom* to be worthy of its own place in the annals of gaming history.

Nevertheless, these other argumentative brigands insist that the weapons in it weren't much cop. Rubbish, say I. *Heretic* is set in a very 'swords and sorcery' environment, so instead of shotguns and plasma rifles, you were equipped with ethereal arrows and the blue-laser-bolt-spitting Dragon Claw. Flying beasties and the kind of superb level design that we preyed would be in there resulted in something you should definitely play. Its only downer was that it never worked as a multi player game.

STEVE OWEN **85%**

4 TOP GUN
Powerplus £13

For many years a sickeningly awful, pointless American film (I feel safe saying this now that Jonathan has left), Top Gun, just 15 months ago, suddenly turned into a rather impressive and literal flight simulator from those masters at MicroProse. Perhaps most shocking of all is that a games company actually paid money for a 'proper' licence and then did something with it that they could actually sit back and be proud of. Perhaps more companies should give it a go.

Top Gun is graphically midway between 'then' and 'now'. It still looks pretty good to this day, but because it required a fairly hefty PC back in the good ol' days, it now runs pretty comfortably on just about anything you give it. Graphics aside, though, you will either be pleased (Jonathan) or annoyed (me) by the movie tie-ins. 'Hondo', the archetypal angry, bald commanding officer from the film, is clearly struggling to find work, as he has been roped in for the

video sections in much the same way as Mark Hamill does in *Wing Commander*. He provides some background to the missions and an opportunity for a script-writer wannabe from MicroProse to prove his knowledge of the film with various fill scenes.

The game, fringe elements aside, is a solid, enjoyable flight sim, and one that is a little easier to pick up than something like *EF:2000*. Perhaps its best feature is the little video window in the bottom-right corner. It normally shows your target, but often cuts to showing if anything interesting is going on, such as the destruction the bombers you've just been escorting have wreaked. *Top Gun*. Top fun.

STEVE OWEN **83%**

5 FLIGHT OF THE AMAZON QUEEN
GT Replay £15

Way back in the dawn of point-and-click adventures, when there were no such things as cut scenes, and control systems took up the bottom quarter of the screen, Renegade released a charming competitor to LucasArts' monopoly in the shape of this little beauty. Of course, it failed to topple LucasArts' crown, but was jolly good fun anyway, and received good reviews from all over the computing world, thanks to its sense of fun and unassuming charm. In terms of gags it is perhaps unfair to compare it directly to, say, the *Monkey Island* games, because it lacks the biting wit and zany touch which make those classics. Don't get me wrong, though – it is by no means a bad game. In fact, it is quite the opposite, despite the clunky graphics (they were considered old even when it was first released) and sometimes less-than-wonderful sound.

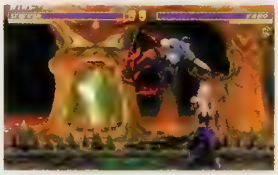
The plot itself revolves around the adventures of one Joseph King (gag number one: he's Joe King), who ends up in the middle of the Amazon jungle with a plane to fix. Things quickly progress from there, involving all sorts of escapades, set pieces, and more bad jokes.

The combination of solid scripting, good voicing and a real sense of fun make this a game you would do well to pick up for the asking price. Don't expect the best thing since Guybrush Threepwood, but prepare yourself for an enjoyable and well-structured foray into the often funny and frequently brain-taxing world of the Amazon.

JON HYDE **81%**

AND THE REST...

Perhaps the reason there aren't that many beat-'em-ups on the PC is because there is, so far, no such thing as a decent PC gamepad, and playing these things with a joystick or killing your fingers with keys is no fun. Before the onslaught of the 3D beat-'em-up, *Mortal Kombat 3*



(71%) from GT Replay was certainly one of the best of the 2D bunch, and one that had been hyped to death using the 'game they tried to ban' tag line. It all seems a little less impressive these days, but if you aren't one to yearn for the latest technological marvels, there is undoubtedly some violent entertainment locked away here.

D (45%), £13 from

newcomers Black Market, on the other hand, offers very little in the way of pleasure. Suffering even more since appearing early last year, this is an example of why the CD-ROM revolution wasn't quite so impressive after all. It's an interactive movie in nearly the worst way, but one better than the very worst simply because it has some reasonable intriguing puzzles and a splattering of atmosphere and surprises.

Finally, *This Means War* (68%), £13 from the Powerplus range, is an isometric real-time strategy wargame. It was a nice idea, but just a little too clunky to prove truly successful as a *Command & Conquer* wannabe.

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Play computer games for fun and – yes! – profit with the latest on-line sensation, *Worbble*. And other multi-player nonsense from the bottom of the Internet barrel.

By RICHARD LONGHURST

INTERNET GAMING ZONE

`http://www.zone.com/`

Microsoft may be mighty kings when it comes to operating systems, but they're stunted peasants as far as games are concerned. They're trying to put things right by enhancing the Internet Gaming Zone, which provides free matchmaking for top PC games (and some of Microsoft's). Eleven multi-player games can currently be enjoined (as a monk might say) on the site, including *Monster Truck Madness* and *Microsoft Golf*. Unimpressively, Hasbro are one of the first third-party developers to sign up, enabling you to play *Monopoly*, *Scrabble*, *Risk*, *Battleships* and all kinds of other antiquated cak. Microsoft have also teamed up with DWANGO to provide Zone members with easy access to DWANGO's network of dial-up gaming servers.

Microsoft are currently developing games especially for on-line play, the first of which will be *Fighter Ace*, a World War II flight sim that will support more than 100 players in a single flight arena. You'll have to pay by the day or month to take part in the special on-line games, though, whereas the Internet Gaming Zone matchmaking facilities will be free of charge.

Oh yeah, tech-heads will be glad to hear that the site's ZoneLAN feature enables gamers to use the Zone's matchmaking features to play multi player games that require the IPX network protocol. You can get a preview of the new-look Gaming Zone at `http://beta.zone.com/`

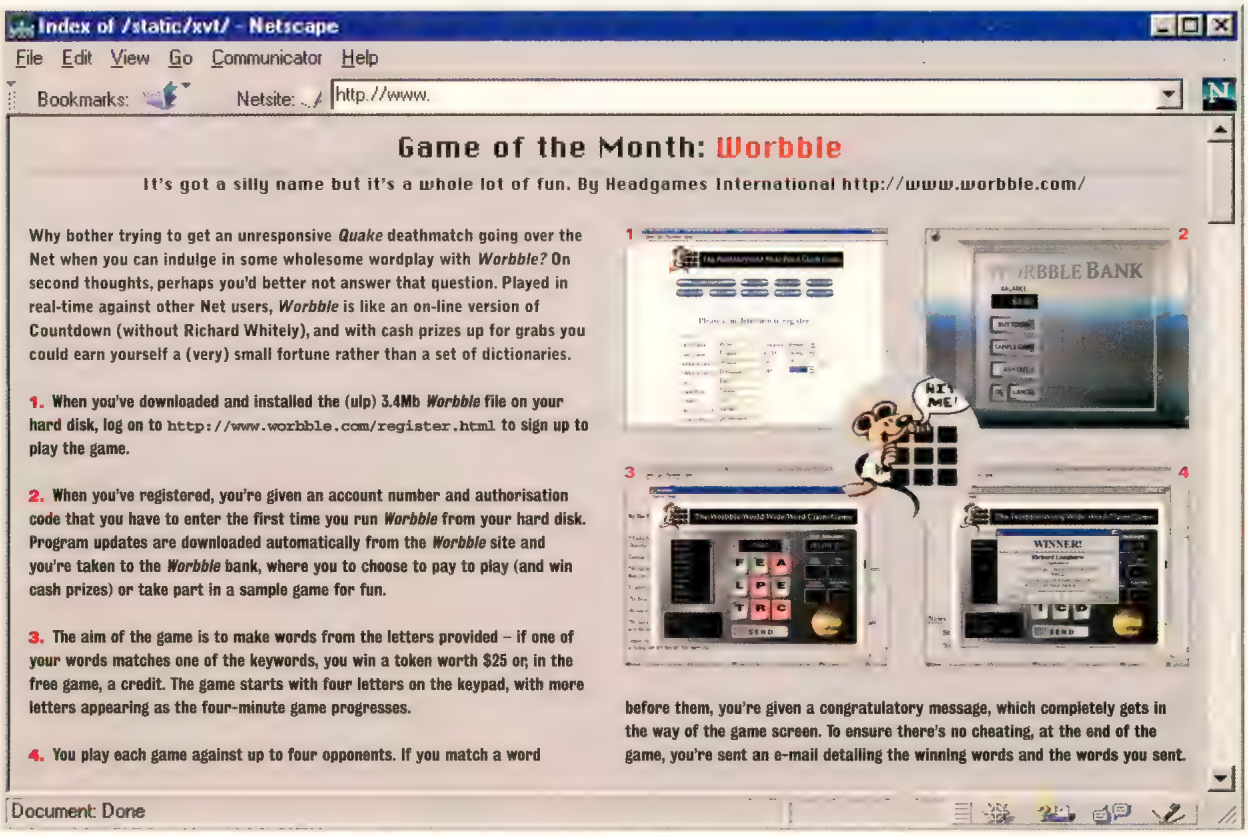
And, oh yeah, again – LucasArts' RebelHQ (`http://www.rebelhq.com/`) is the latest addition for on-line *X-Wing vs TIE Fighter* combat. Thought that would get your attention.

"For the Alliance!" Oh sorry, that's *Warcraft* isn't it? Um... "May the Force be with youzzzzz...."

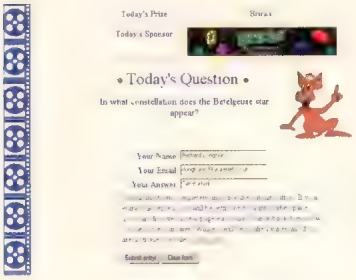
TRIVIA HOUND

`http://www.worldvillage.com/wv/gamezone/trivia/index.html`

The new daily trivia game gives you the chance


Index of /static/xvt/ - Netscape
File Edit View Go Communicator Help
Bookmarks: Netsite: http://www.
Game of the Month: Worbble
It's got a silly name but it's a whole lot of fun. By Headgames International http://www.worbble.com/
Why bother trying to get an unresponsive *Quake* deathmatch going over the Net when you can indulge in some wholesome wordplay with *Worbble*? On second thoughts, perhaps you'd better not answer that question. Played in real-time against other Net users, *Worbble* is like an on-line version of Countdown (without Richard Whitely), and with cash prizes up for grabs you could earn yourself a (very) small fortune rather than a set of dictionaries.
1. When you've downloaded and installed the (ulp) 3.4Mb *Worbble* file on your hard disk, log on to `http://www.worbble.com/register.html` to sign up to play the game.
2. When you've registered, you're given an account number and authorisation code that you have to enter the first time you run *Worbble* from your hard disk. Program updates are downloaded automatically from the *Worbble* site and you're taken to the *Worbble* bank, where you to choose to pay to play (and win cash prizes) or take part in a sample game for fun.
3. The aim of the game is to make words from the letters provided – if one of your words matches one of the keywords, you win a token worth $25 or, in the free game, a credit. The game starts with four letters on the keypad, with more letters appearing as the four-minute game progresses.
4. You play each game against up to four opponents. If you match a word
1
2
3
4
HI ME!
WINNER!
before them, you're given a congratulatory message, which completely gets in the way of the game screen. To ensure there's no cheating, at the end of the game, you're sent an e-mail detailing the winning words and the words you sent.
Document: Done

to win a prize each and every single downloadin' day of the week. The game's creators, InfoMedia, obviously reckon that current computer games are far too taxing for today's callow youths. "Gaming on the Internet is taking off like never before," says InfoMedia's president, Joel Comm. "However, many people don't have the time to play for very long. Trivia Hound presents a new question every day, and only takes one minute to play." In fact, it's not really much of a game at all – it asks you a question, you enter an answer and come back the following day to see if you've won. Still, at least it's free. Well, the cost of a local phone call anyway.

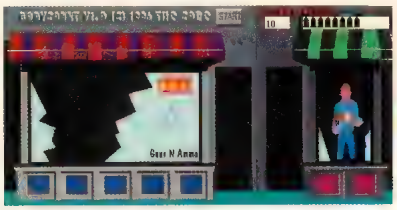


He's trivial and he's a dog. No mix-ups there, then.

EXSCAPE

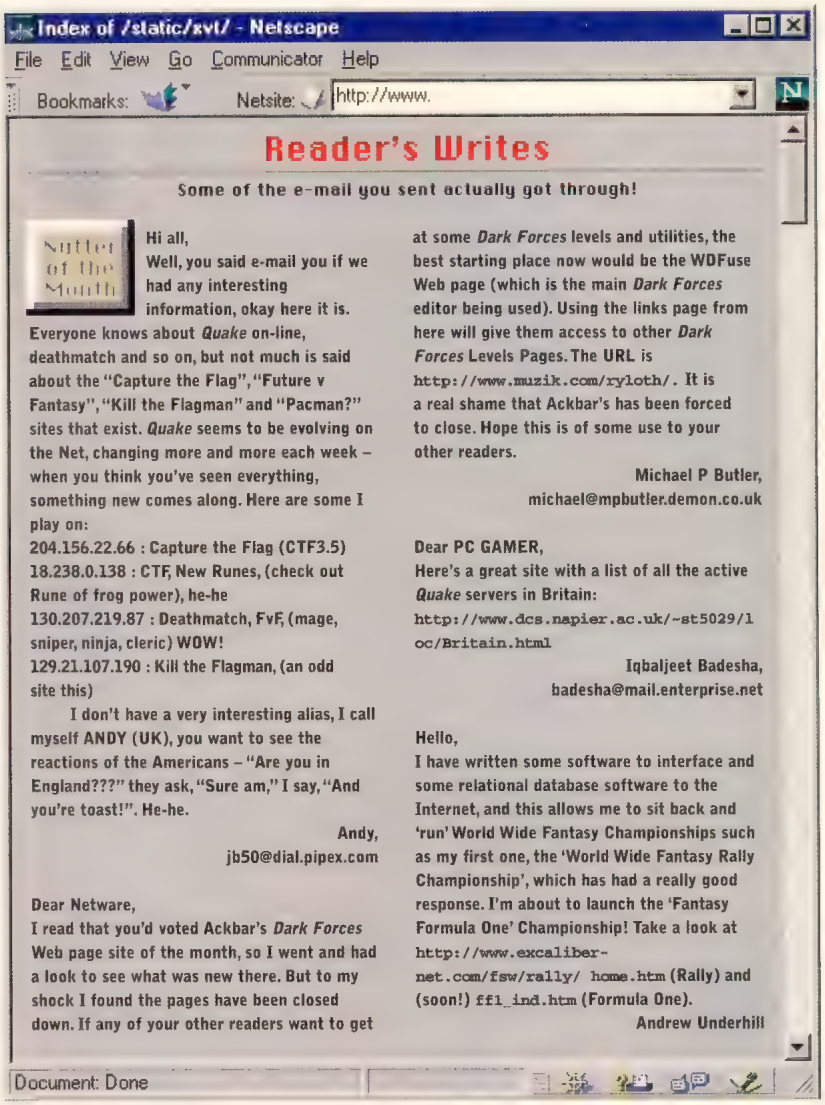
`http://www.exscape.com/`

Continuing the on line vocabulary vogue for gratuitous use of the letter 'x' (perhaps because it makes them look slightly risqué), the Exscape e-zine contains plenty of demos, shareware and tips. Two teenage cousins created the site. News of *Quake 2* and *Ultima Online* updates should sate those looking for big game info, but Net users will probably be most interested in the Java Vault, a collection of links to some 200 Java games which'll have you trilling with delight like a budgerigar on heat. They're divided into four categories – Action/Arcade, Casino/Word, Board Style and Strategy/RPG – and because none is much more than 50K, you can download a pretty sizeable fistful without doing too much damage to your phone bill. PCG



You can access the PC GAMER Web site at `http://www.futurenet.co.uk/`

If you've seen anything on the Internet that you think might be of interest to us, e-mail rlonghurst@futurenet.co.uk. Richard Longhurst is the editor of *.net*, Europe's most popular Internet magazine.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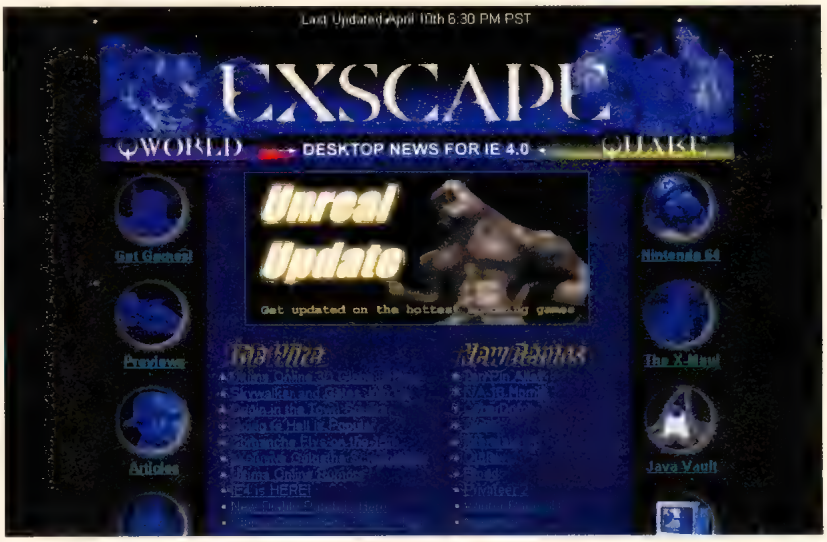
Reader's Writes
Some of the e-mail you sent actually got through!
Nutter of the Month
Hi all,
Well, you said e-mail you if we had any interesting information, okay here it is. Everyone knows about *Quake* on-line, deathmatch and so on, but not much is said about the "Capture the Flag", "Future v Fantasy", "Kill the Flagman" and "Pacman?" sites that exist. *Quake* seems to be evolving on the Net, changing more and more each week – when you think you've seen everything, something new comes along. Here are some I play on:
204.156.22.66 : Capture the Flag (CTF3.5)
18.238.0.138 : CTF, New Runes, (check out Rune of frog power), he-he
130.207.219.87 : Deathmatch, FvF, (mage, sniper, ninja, cleric) WOW!
129.21.107.190 : Kill the Flagman, (an odd site this)
I don't have a very interesting alias, I call myself ANDY (UK), you want to see the reactions of the Americans – "Are you in England???" they ask, "Sure am," I say, "And you're toast!". He-he.
Andy,
jb50@dial.pipex.com
Dear Netware,
I read that you'd voted Ackbar's *Dark Forces* Web page site of the month, so I went and had a look to see what was new there. But to my shock I found the pages have been closed down. If any of your other readers want to get at some *Dark Forces* levels and utilities, the best starting place now would be the WDFuse Web page (which is the main *Dark Forces* editor being used). Using the links page from here will give them access to other *Dark Forces* Levels Pages. The URL is `http://www.muzik.com/xyloth/`. It is a real shame that Ackbar's has been forced to close. Hope this is of some use to your other readers.
Michael P Butler,
michael@mpbutler.demon.co.uk
Dear PC GAMER,
Here's a great site with a list of all the active *Quake* servers in Britain:
`http://www.dcs.napier.ac.uk/~st5029/loc/Britain.html`
Iqbaljeet Badesha,
badesha@mail.enterprise.net
Hello,
I have written some software to interface and some relational database software to the Internet, and this allows me to sit back and 'run' World Wide Fantasy Championships such as my first one, the 'World Wide Fantasy Rally Championship', which has had a really good response. I'm about to launch the 'Fantasy Formula One' Championship! Take a look at `http://www.excaliber-net.com/fsw/rally/ home.htm` (Rally) and (soon!) `ff1_ind.htm` (Formula One).
Andrew Underhill
Document: Done



(Above) The excellent Exscape games zine. (Above-left) Who needs a stack of 50 pence pieces when you've got Java?

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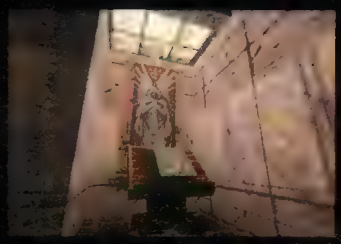
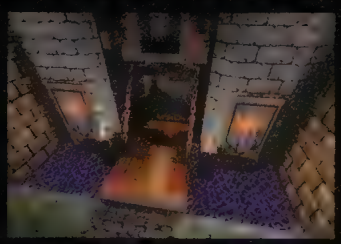
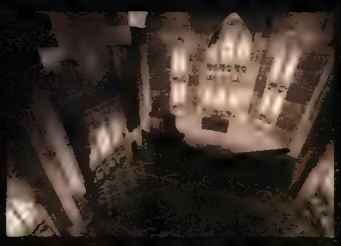


Possess distinct spells, powers and weapons. With experience, gain levels, more hit points and certain abilities that apply to your specific character class, such as increased speed, fire power and jump distance.



Lose yourself in lightning storms, blowing leaves, earthquakes, spraying fountains and pouring rain.



Bludgeon your way through four demon-infested worlds — Medieval, Egyptian, Mesoamerican and Roman. Smash stained-glass windows, collapse structural beams, pulverize trees and shatter egos.

The Four Horsemen of the Apocalypse lurk in the shadows before you. They are Death, Pestilence, Famine and War. They are the root of all that is evil. They are the least of your worries.

The third and last known Serpent Rider, Eidolon, lives. As the Necromancer, the Assassin, the Crusader or the Paladin, you must defeat the Dark Generals and their Hell-spawned legions before you can face the archfiend and attempt to end his ravenous onslaught.

Go in peace. And you will surely die.

HEXEN II

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C&C: Counterstrike

Many young and promising lives were blown apart to bring you this intelligence on *C&C: Counterstrike*. By MARK DONALD

With *C&C: Counterstrike* out-selling every other game, the time is right for a full guide to every mission. Many of them are easily completed just by being good at the game, but there are some that require specific tactics. This selection should be more than enough to keep you going.

SOVIET MISSIONS

Proving Grounds

You've got a very big camp but no-one to man it. So flog the tech centre, SAM sites and a power station. Start training grenadiers. Move your mess of troops to the first flare in the north-east. You'll hear Tanya utter a taunting "bye bye". Put the radar on global scan to find your new base. Your only hope is to crush Tanya with an ore truck. You'll probably lose two out of three refineries. Head north to add a war factory to your property portfolio. Churn out tanks. Keep forces in all your territories as you'll be assaulted from all angles. When you've got enough, drive a large tank party west to take out the allies' base, then head south down the peninsula to claim your construction yard. Build a few subs then watch with amusement as they nuke destroyers out of the water.

Besieged

Forget the saboteur – he'll stay out of reach until the end. But as he's systematically demolishing your base you must find new property urgently. First build one ore truck to increase the cash flow then build four subs, two transports, an engineer and plenty of tanks. Load the engineer and tanks onto the transports and sail north with your sub escorts. Just crash straight past the gun turrets, pausing only to take out the last destroyer by the naval yard. Land your force and biff the defenders in the western base. Raze everything to the ground while capturing the construction yard. Build a new refinery in the north-west as your original is for the chop. The saboteur will end up in the north-east corner. A couple more refineries; helicopters to take out turrets and huge packs of tanks should do it.

Mousetrap

Put everyone in groups and formations. Your flame throwers are a menace to society so put them in their own group. You can't capture the chronospheres yet. Head north into the large chamber. Then, move west until you come across the special chronosphere (you'll know it when you see it). Send in an engineer and when he rematerialises go to the control panel beyond the power stations and hit the controls. Handily, most of the chronospheres will explode, preventing Stavros' escape. Move everyone back to the large chamber and you'll find Stavros to the east. Chase him east and north. Your troops will easily overcome all resistance and your dogs can eat Greek.

Legacy of Tesla

Don't venture south of your base for now, your lovely tesla tanks will be hurt. Instead, go west. Build three ore trucks then assemble a raiding party comprised of three V2s, four heavy tanks, the teslas and an engineer. Use the V2s to nobble the turrets from a safe distance then bulldoze the entire western base except the naval and construction yard. Capture the construction site but don't touch

Might is right

Stick to this principle and you can't go too far wrong in *C&C: Counterstrike*. Our glorious victories across the Internet have taught us that the only language any *Red Alert* opponent understands is overwhelming force. When battling on land, sea or air, always use vast unit formations. While the computer's forces spread their fire over loads of your units damaging them lightly, you can concentrate massive power on one of their units annihilating it utterly, and then the next and then the next. A tank rush of ten or more tanks is one of the most potent forces in *Red Alert* (along with MiGs) and all you need are a couple of war factories (to speed construction) and a good cash flow. Two refineries early on are essential, moving up to three or four a bit later on when you're secure. See the 'Building blocs' boxout. Whenever a mission allows you to build a base, this plan should ensure ultimate victory.

Nuclear Escalation – Take out the tech centre to halt the nuclear bombing.

the naval yard otherwise you'll be nuked for your trouble. Construct a new naval yard, then knock up four or five destroyers and a couple of transports filled with tanks. The nuclear air base is on the second southern island. Once it's retired, mopping up the outpost in the south-east is a relatively simple matter.

Soviet Soldier Volkov & Chitzoi

Tips are not required for this mission. Failure is unthinkable. But just to be sure, heed the following advice. Leave your armoured spearhead in place. They'll massacre anything that looks at them. Concentrate on waltzing the people's heroes – Volkov & Chitzoi through a cast of allied stiffs. Once they've wasted everything in reach, send in the tanks to mop up the rest.

Top O' The World

Group your units into their respective troop types. The timer is a red herring as this is a very quick mission. Whenever you engage hostile forces, stop and set up a three-way crossfire with your formations. Remember that mammoths regenerate, so use them as shields to absorb damage for the rest. Withdraw whenever they need to recover. Once you cross the ford you'll enter a valley studded with hill-side turrets. Use the V2s to pick them off from a safe distance. There are three on the way up and two more on the way down. If it all goes horribly wrong on the way south, then make a dash for it with the truck. The base is close by and you'll probably make it.

Paradox Equation

Several bizarre phenomena are at work in this mission, such as heavy tanks firing electricity and allied tanks hitting with mammoth power. Initially, though, you'll need infantry to stem rocket troop attacks. Enemy tanks hold the ore field just north of the trees. Build a couple of tanks to take them out as your ore trucks need fresh supplies. Six heavy teslas should be enough to roll over the western base before you turn to the north. Prepare an engineer to capture the naval yard. Three transports full of tanks will enable you to overcome the island defences but don't destroy the chronosphere. Drive a tank through the chain fence by positioning the 'move' cursor along one length of the compound, then take it with two engineers.

Nuclear Escalation

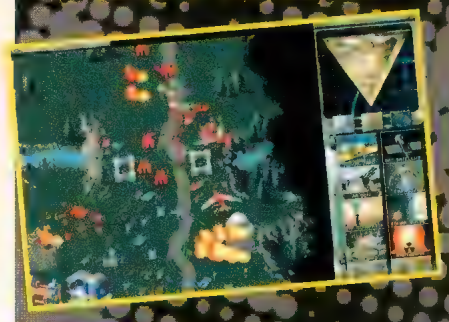
Do not deploy the MCV immediately. Head east and park it on the road along the more defensible valley nearby. Building your base between these two ore fields you shouldn't want for cash, but there is more to be liberated from a church to the south-west. Plonk a couple of teslas at the northern approach to your base to seal off the top entrance to the eastern ore field. Ignore the western outpost for now, concentrate on sorting out the nuclear attacks from the north. Take the base from the western flank, using V2s on high ground to pick off the turrets (groups of three will destroy a turret with one volley). Move in your tanks. The tech centre is in the north-east corner, but you'll have to level everything to win.

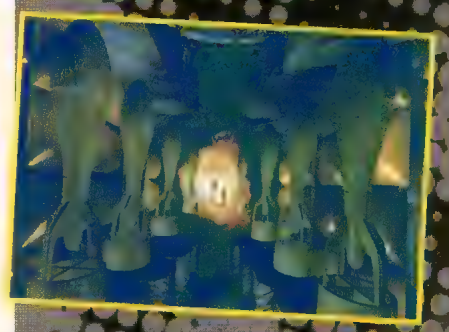
Building blocs

Notwithstanding local conditions and the intervention of hostile elements, the following construction sequence will provide you with a magnificent base that'll make you the envy of all your neighbours. Build a barracks before a war factory, because infantry are the most economical way of halting the initial computer assaults before you can build a respectable number of tanks. If you're playing the allies, then a tech centre should come in at number eight to provide the GPS. Use the service depot extensively, especially early on when you can ill-afford to lose tanks. Group your tanks and, as the first group takes damage, pull them back to the depot while the second group press home the attack. In multi-player games a couple of extra construction yards are a major boost to build times and air defences are vital. Clicking twice on, for example, the war factory will make it the primary building and therefore the deployment point for fresh forces.

1 Ore Refinery (Construct power plants and silos as necessary.)
2 Ore Refinery
3 Barracks
4 War Factory
5 Service Depot
6 Ore Refinery
7 Radar Dome
8 Turrets/Teslas
9 War factory
10 Other buildings at your leisure

STOP PLAYING WITH YOURSELF





THRUST WORLD

In the final reckoning, *Red Alert* is all about tanks.

ALLIED MISSIONS

Sarin Gas 1: Crackdown

Don't worry about the radar centre. Use mine-layers to seal off the approach to your base and the roads north and south of it. Keep them mined and the convoy trucks are doomed. Keep a few light tanks on the road to be sure. When you assault the main base, nobbling the teslas is critical. Strike in the south-east corner and level everything you find. Move north to the next base section and head for the east of the map. The wall is guarded by a V2 but out of tesla range. Breach the wall and atomise all power stations. With the teslas off-line send in your main force to destroy them and then vandalise the rest of the base.

Sarin Gas 2: Down Under

Group your troops. Use the spy to press the control panel to blow a flame turret then move north with the spy and hit the next panel. Head south with the spy to infiltrate the war factory. Your agent trucks it off-screen and then reappears in the east. Disembark immediately and set off the nearby panel. Leave him to await further instructions. Move the infantry east killing dogs and catching grenadiers with exploding barrels. Four dogs must be put down before the spy can proceed. Send him north to hit the next panel. Presently, you'll discover two teslas going mental. Tiptoe the spy past to the panel. When the mammoth turns up let it have three shots on the tesla then activate the panel. The mammoth and teslas will destroy each other. Send Mr Bond south to the next panel. The two teslas will fry everything but your side. Curious. The spy can then continue south to release our Tanya. Run amok with her, taking the first turn east and then heading north to the two flame turrets. Send the spy past the turrets and behind the wheel of the mammoth. Stand well back. It'll bulldoze its way out and any survivors can follow.

Crackdown – Attack this vulnerable eastern wall to get at the power stations

Sarin Gas 3: Controlled Burn

Scout out the lie of the land with the spy. Bundle your rocket troops into the APC, avoid the patrolling mammoth and crash straight into the eastern base. Keep going into the corner. Disembark, then use the APC to splat as many infantry as possible. Blow the barrels and cripple as many power stations as you can. The two light tanks can then destroy all four teslas from their valley. Deploy the MCV by the flare. The rest of the enemy are lurking in the south-west. Build about six artillery pieces to accompany your tank force. Station the artillery on the high ground overlooking the base in the south-west. Tanks will need to nail the mammoth first, though. Then your artillery can pound power stations. Charge the tanks in, smack the teslas and prepare engineers to take the labs.

Fall Of Greece 1: Personal War

You'll need to act fast in this mission as the enemy are in hot pursuit. Head north but avoid the mammoth. Follow the civvy west around it. As you approach the base all hell breaks loose. Grab the health crate if you need it but otherwise run away before the base is nuked. Reinforcements will arrive and should be enough to see off your pursuers and

the two mammoths. Keep moving south-west crushing the snipers in the trees. At the ford, leave the Paras to their tesla fate while Tanya nips round the back to demolish the power plant. Sending your surviving tanks back to the start of the map should draw off any enemy tanks that are being particularly irritating. Head north to the bridge and shoot the barrels, taking out the advancing mammoths. Then it's south-west a bit before moving north to the base. Use Tanya to destroy the barrels to disable the tesla while your reinforcements can crush all remaining resistance. Then skip Stavros to safety.

Fall Of Greece 2: Evacuation

Use a ranger or light tank to scout out the location of the villages. One lies in the south, another in the east, another to the south-west and the fourth in the west just below the bridge. There's no need to assault his base - just use a massive tank force to hold the centre. As long as you do, it's a simple matter of running sample villagers to the safety of your base. The island is in the north-east, but there's only one beach on the mainland – in the south-east just above the allies' base. Build a fleet of four or five destroyers, send them out hunting subs and then bombard the enemy base from off the coast. Your tanks should hold the landing site while you have your civvies board a transport. They are colour coded by village. However, make sure you back them up with a transport full of tanks as when you and on the island a team of Paras provides one last surprise. Ooops.

Siberian Conflict 1: Fresh Tracks

The first 20 minutes is crucial. After that, convoys come thick and fast, and you'll only have time to react to new threats. Build one new ore truck, a mine layer and tanks. Stop the convoys by cutting the bridges and mining the key roads. Send a scout round and pick off patrols with the helicopter and tanks. Take out the bridge in the north-west then start mining. Mine the road to the south-east of your base. The first convoy arrives here. Drop mines all around the road entering your base in the south-west corner – mammoths and the sixth convoy enter here. At some point you need to destroy the bridges in the north-east and the south-east. This leaves a single route east. Mine it like you've never mined a road before. The road in the north east, near the enemy base, is the arrival point of the 7th convoy. Mine it or organise a light tank welcoming committee. Watch out for the crates the trucks drop. They're not power-ups, they are nukes.

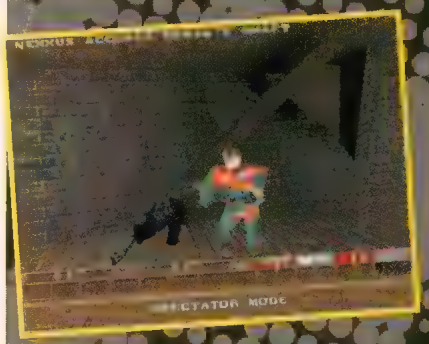
Siberian Conflict 2: Trapped

Once your base is under way destroy the two bridges to the east. Turret and mine the remaining entrances. There are two enemy bases: one, huge, tesla-riddled mother in the middle and a minor outpost in the east. Send a force to pick on the little one, then concentrate on starving out the nasty base. Leave some tanks in the east to wreck the bridge, then mine the road and await the third convoy. The first convoy will head for the heart of your base. So it's dead then. The second truck takes the road running south to north. Place a few mines on this stretch and that's the end of that. Eliminate the enemy ore trucks in the north then battle it out for the ore field in the central west region. Once you've destroyed the ore trucks move in and ruin his base. The power stations are in the south and vulnerable to coastal bombardment.

Siberian Conflict 3: Wasteland

Nothing fancy, just wipe the Soviets from the face of the map. So follow the standard building plan, build ore trucks and amass an obscenely large tank force to rush the base. Ore litters the map, particularly to the south and east.

START PLAYING ONLINE



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The main base is in the centre and there's a minor outpost to the south west. Extra dosh is up for grabs in the eastern oil field. Victory is assured

THE 'IT CAME FROM RED ALERT' CAMPAIGN

As you'll have gleaned from last month's review, *Counterstrike* enables you to access the not-so-secret *Red Alert* ant missions. So press down the left shift key, click on the round speaker in the top-right of the menu screen and prepare to do battle with B-movie bugs that eat tanks.

Ant Mission 1

Scoot your forces north, take the second road east and prepare for creepy-crawly combat. Repair essentia systems only (i.e. leave the radar and ore bin to rot). Your most convenient ore field is located just south of the base but there's more to the west and north-west. Build two ore trucks as soon as you can. Implement the following bug slugging techniques: scatter your infantry units ('x' key) and put them on guard ('g' key) at all times. Build two mine-layers and seal off all but one of the approaches to your base. Construct Rangers and order them to escort your ore trucks – big ants eat them for breakfast. You'll have to drop mines like confetti to hold out for the full 30 minutes. At the end ensure that you have a contingent of troops to protect the radar dome. If you're feeling flash, sell your ore refinery at the end to prepare yourself for Mission 2.

Ant Mission 2

Deploy the MCV to the far north-east of your base by the river in the small space amongst the ore there. Build an ore refinery right next to it to keep the distance your trucks have to travel to a minimum. Forget the bridges for now, grab the civvies. Build an APC and sneak it past the ants in the eastern village. Unfeasibly large ants are a bit thick, so you can distract any on guard with a sacrificial ranger. Fulfil your mission obligations by loading up a single villager, then rendezvous with the amphibious transport in the north-west. In the south-east corner, if you can give the ants the slip, an entrepreneurial ranger can find money crates. Build loads of tanks. The second village is in the north as are all the bridges. Despatch your armoured division to take on ants while your APC charges up the east side of the map into the village via the ford. Have a couple of tanks drill ants while the rest demolish the bridges.

Ant Mission 3

Trundle the MCV west slightly and deploy it by the ore field. There's an ant's nest and lucrative ore deposits just to the north. Ring the nest with troops and put them on guard. If a giant ant peeps his head out, they'll blow it off. When the bug boffins turn up, gas the nest then keep them snug in the APCs. Build a tank posse. South west of

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THRUST WORLD

Ant Mission 3 – Stud the approaches to your base with a lethal wall of turrets.

your base are twin fords and beyond these another nest. Send in a couple of tanks to keep the ants busy and run a boffin past the chaos and into the nest there. This should keep your base safe for the rest of the game. Now, your aim is to push north, going round the map anti-clockwise. There are seven nests. Build loads of tanks, attack them in force, and run an engineer in when you get the chance. The toughest one is in the far corner and you may sacrifice a couple of people to get to it.

guard at all times. Ants can from nests at any time.

Ant Mission 4

Don't move. Form all your men into groups and formations ('f' key). The keys to this mission are barrel ambushes and carefully prepared crossfires. Set up your groups where they can all fire at once, then use one poor stooge as bait to sucker ants, one at a time, into your kill zone. Never take red ants head on. Approach them at an angle. If you shoot first, they often retreat. The light switches are in the second corridor south, off the first major room. North of this hanger is a room crawling with monster ants and cocoons. One man can take them all. Let the patrolling ant pass, then, heading north, dodge the drones and blow the barrels. They'll all be gassed saving you a lot of bother. Now a mammoth tank will turn up to general applause. The mammoth can regenerate up to 50% of damage so let it take the brunt of the action. In the final chamber, the Queen ant (who also regenerates) awaits your pleasure. You'll need the mammoth intact along with some mates to kill her. End campaign. PCG

Red Alert: Counterstrike **received a Game of Distinction accolade and a score of 87% in last month's PC GAMER.**

Ant Mission 4 – Obviously we didn't have this many men. This effect is an unfortunate side effect of *C&C* cartography.

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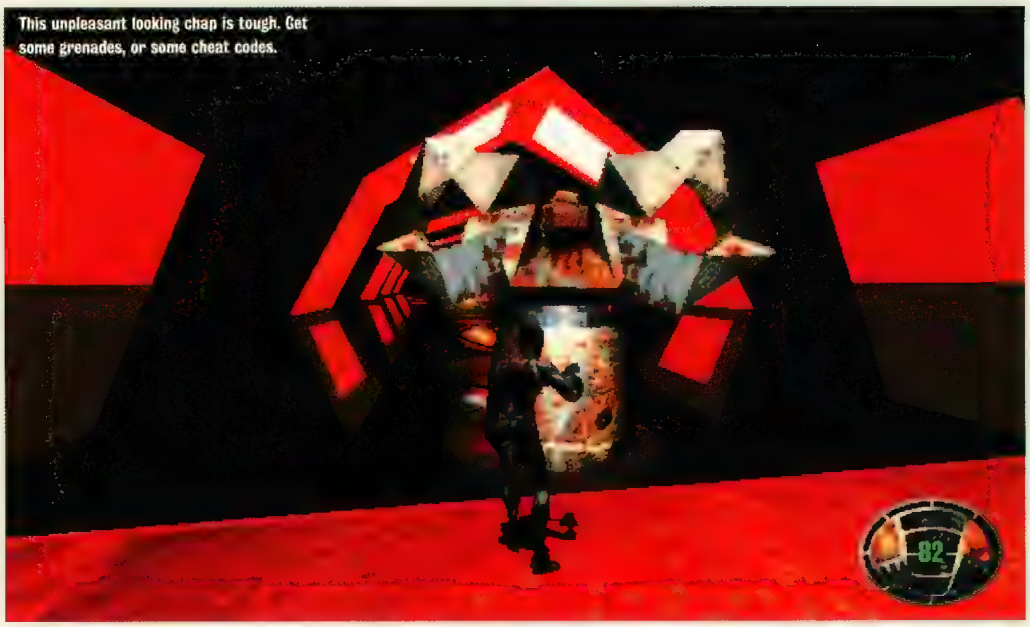
GAM01

MDK

PLAYING GUIDE

The first three levels are old news. The gliding parachute is no longer a thing of mystery. Even the helmet's old hat. But you still can't get any further? Then walk this way with part two of PC GAMER's *MDK* solution...



This unpleasant looking chap is tough. Get some grenades, or some cheat codes.

Sniper tips

Remember to use the mouse for any protracted sniper/ bombing work, as it's much faster and more accurate than the keys. Also, side-stepping, especially in sniper mode, is an excellent way to use the power of the sniper gun while still being able to avoid rapid death.

After last month's tips extravaganza, you'll be nearing the end of World 3. By this stage, you should be at a point where you've mastered all the skills you need to complete the game. All the control tricks should be available, and you may even be beginning to think the *MDK* way. So, it shouldn't be a surprise that the game starts to get really difficult, and not-so-subtly different after these 'introductory' levels. Never fear, though. The first of the many *MDK* cheats are over in Foul Play (see page 132), and the final chapter of the walkthrough is right here. This doesn't detail everything that must be done in order to complete each arena, but anything not in here should be fairly obvious (like, shoot the guards). If there isn't a specific way to kill a droid, use your ingenuity. Or your chain-gun.

WORLD 3 CONTINUED

Arena 5

Destroy the two sentry guns in sniper mode from the edge of the entrance platform. Then, jump onto the blue triangular platform and shoot the floating sentry with sniper grenades. Drop to the floor and collect the cowardly power-up, then enter the red cave and follow the passage to the green platform. Destroy the robots, then stand at the base of the arrow. Follow the arrow's direction and jump across to the yellow platform. From here, jump across to the blue exit. If you didn't destroy the floating sentry earlier, watch out for him here.

Arena 6

From the top of the slope, switch to sniper mode and take out the sentries. Next, shoot the gun pod once and wait for it to rotate. When the open front section is visible, shoot the operator in the head. Advance, then go up the fan shaft. When the flying drones appear, wait till they slow down to turn round, then shoot one of the sky sled riders in the head. Steal the sled.

Arena 7

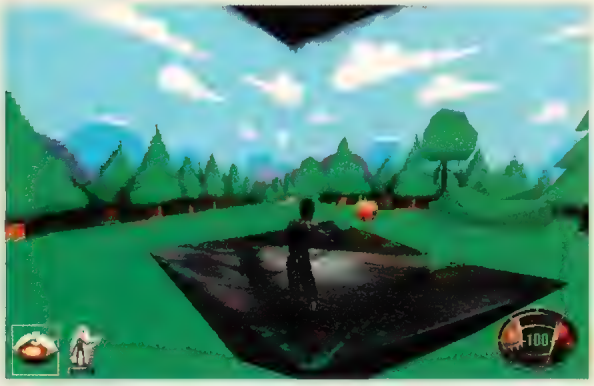
Shoot the glass, then drop the thumper to wipe out most of the droids. When you reach the three-pointed object, shoot it until it spins to open the door. When you reach the alien structure with two leaping guards, kill them, then shoot the front left side of the structure until it shatters. Repeat with the opposite side, then shoot the exposed middle to reveal the exit.

Arena 8

An easy one, this. Steal the sky sled, then shoot. Lots.

Arena 9

Collect the turkey power-up in the right of the room, then advance to the boss area. Chain-gun the dogs until the spinning window starts to slow down. Then put the sniper helmet on and shoot one of the red buttons. The others will fire at you, so prepare to dodge a bit. Take the helmet off and kill the dogs until the window starts to slow down again. Repeat the process until all four buttons are destroyed to complete the world.



WORLD 4

Arena 1
Float down, then turn right around. Position yourself over the ice, then drop down through it. As you drop, destroy the large sentry, then steal the snowboard to finish the room.

Arena 2
This is the snowboard area. Avoid the rocks at all costs.

Arena 3
Shoot the console to summon a ship. Destroy the guards, then enter the ship and prepare for a bombing run. Remember to use the mouse to control bombing runs, and destroy as much as possible. After that, blow up the hut to reveal a dummy decoy. Best to use this near the exit cave, where the enemy concentration is highest.

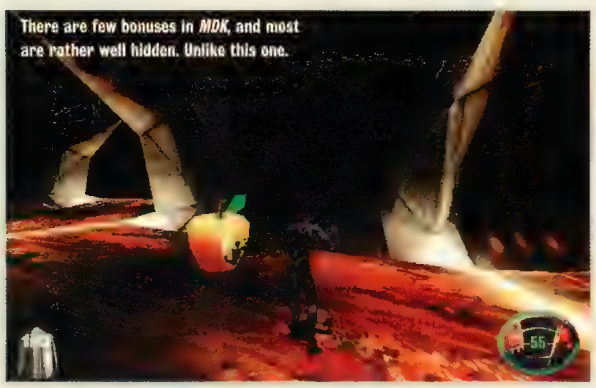
Arena 4
On this snowboard run, make sure you pick up all ten bones to receive a bonus. Earthworm Jim pick-ups will drop cows on the enemies' heads, which could be quite useful. The previously mentioned bonus will be delivered on a passing ship at the end of the run – jump at it to collect.

Arena 5
Float down, taking out the flying drones as they approach. There's a sniper grenade at the tail of the sub, ideal for destroying the guards. When the tank appears, jump onto the submarine and snipe it from there. Kill the remaining guards, then find the nuclear bomb and use it to open the sub door. Throw grenades into the airflow to destroy his pod, then float up to the fan yourself.

Arena 6
Destroy the guard generators first, then destroy the guards and crates to receive multiple bonuses. Use the grenade/airflow trick to destroy the gun pod, or just chain-gun it, then fly up the airflow to the next arena.

Arena 7
Another snowboarding level. Again, collect all ten bones for a twister power-up. The right fork contains a super chain-gun.

Arena 8
Jump into the air current and pick up the super chain-gun. While in the air, shoot down the enemy spaceship and drop down to pick up the falling bonuses. Run into the next area, then destroy the respawner to release a cowardly power-up. Pick this up, then enter the final room in the arena. The boss will drop bombs on you, so avoid them and destroy the crate on the left of the room. Here you'll find a dummy decoy. Use it to distract the boss, then shoot the rest of the crates to stock up on grenades. Stand in front of the boss, then throw grenades into the airflow until he's dead. Easy as that. And so on to... World 5.


There are few bonuses in *MDK*, and most are rather well hidden. Unlike this one.

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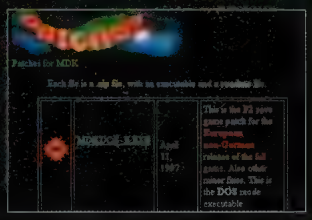
The MDK patch

There isn't a lot that could be criticised about *MDK*, but there was one design feature that could prove annoying. Because you can only save at the end of each level, a failure late on in the world would force you to replay the entire level, over and over again. In response to criticism from the players of *MDK*, Shiny are working on a patch to allow a single, mid-level save point. The patch is finished, but not available for download at the time of writing. When it's ready, it will be available from `http:\\www.shiny.com`. There's also a 3Dfx patch in the works.



WORLD 5

Arena 1

Enter sniper mode, then wait for the mother ship to fly overhead. Follow it as it turns, then quickly destroy all the gun pods on the sides to send it crashing back down to earth. Switch out of sniper mode, then run into the arena. Destroy the guards, then run up the ramp on the right to find the secret sniper position and dummy decoy power-up. Take out the alert droid by the blast door through the sniper slit, then run back down into the arena. A drop ship will arrive, and drop a couple of droids. Kill them, then shoot the ship down to collect the nuclear bomb. Then blast open the door.

Arena 2

Once you've jumped across to the edge of the passageway, stop at the tunnel's entrance and enter sniper mode. Find the crate at the other end of the tunnel and blow it up to destroy the sentry round the corner. Run on, pick up the sniper grenades, then enter sniper mode and use them to take out the sentry at the other end of the arena. Then, run to where this sentry used to be, pick up the super chain-gun power-up, and use this to blow the gunship in the centre out of the sky. When the forklift truck appears, shoot the glass dome to kill the driver, then use the chain-gun to move the forklift on to the yellow floor panel. This deactivates the force field and opens the exit.

Arena 3

When you find the technician behind the glass, change to sniper mode and smash the screen. Then keep shooting the technician until he falls back on to a switch. Shoot the gun pods off the ship, then run to the front of it and switch to sniper mode. Target the pilot, then kill him. The ship will crash through the arena wall. Take the left-hand path to the next room.

Arena 4

Shoot the spinning globe until it crashes through the floor, then shoot like crazy as you drop through. The last technician to die will crash through the floor, opening the exit.

Arena 5

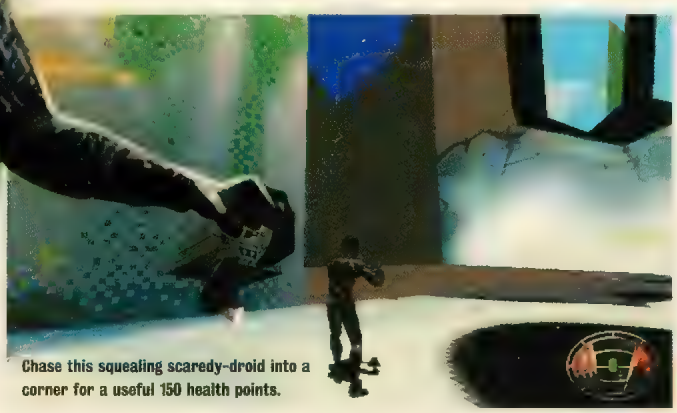
At the entrance, change to sniper mode, then take out the alert droid and the sleeping guards. Run to the doorway on the right and use the dummy decoy. Then kill the floating guard while he's distracted. Find the nuclear bomb and grenades, then run through the other doorway. Blow up the respawners with grenades, then shoot the alert droid on the far side with the sniper gun. Find the mortars, then switch to sniper mode and shoot some through the green-ringed hole to kill the floating guard below. Now all you need to do is drop down the hole and kill everything at the bottom.

Arena 7

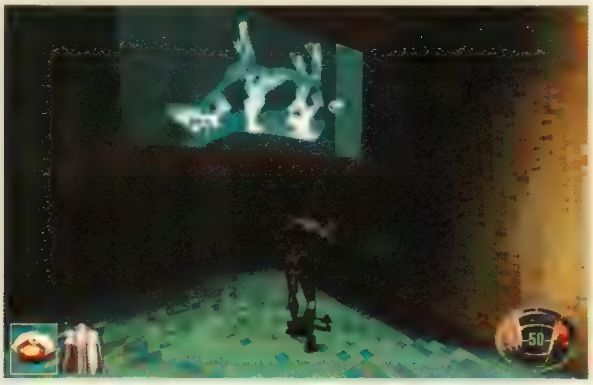
Climb up the blocks on the left to collect a dummy decoy. Use it straight away. Shoot everything, then, when the forklifts arrive, blow the glass domes off all of them. Chain-gun a forklift over to the block on the left of the arena entrance, then climb onto the block via the forklift. Climb up to the room above, then use the forklift to reach the apple power-up, before jumping onto the platform in the middle. Then simply glide across to the exit on the left.

Arena 8

Destroy the gun pod in the usual fashion, then run down the ramp. Take out the next pod by chain-gunning and side-stepping, then use sniper mode to take out the final pod as before. Find all the fans, then ensure auto run is on. Run to the top of the ramp, then float on to the airstream in the right-hand tower. Then all you have to do is float to the next one, and the next one, until you're within reach of the exit.



Chase this squealing scaredy-droid into a corner for a useful 150 health points.



Arena 9

Shoot Gunter a couple of times with the sniper gun, then drop onto the mound in the middle of the room. Run to the edge and avoid the boulder, then run behind it and shoot until it explodes. Pick up all the power-ups from the gully, then wait for the mother ship to fly overhead. Snipe all the gunpods off, then kill all the guards. Gunter will then kidnap Bones.

WORLD 6

Arena 1

Wait for the guard to roll through the glass wall, then run up the walkway. Destroy the respawner and drop through the hole.

Arena 2

Switch to sniper mode and use homing mortars to kill Gunter's dogs, then run around after Gunter, pumping him full of chain-gun ammo until he jumps through the floor, leaving a hole to the next arena.

Arena 3

Run down the length of the room, then jump onto the lowest platform. Climb up the platforms to collect the super chain-gun. Turn to the left and jump across to the homing mortars, then run down the ledge and jump onto the nearest floating platform. Face the entrance wall, then jump on the spot to reveal the next platform. Follow the platforms round, destroy the gun pod, then jump over to it and drop down into the next arena.

Arena 4

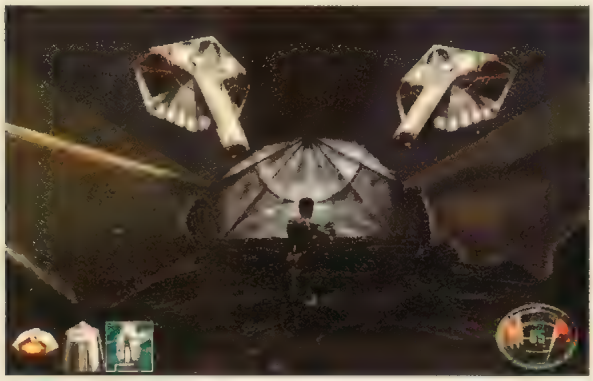
Grab all the power-ups, and use the decoys and twisters to distract the guards in the centre of the arena. During this time, shoot Gunter with the sniper gun. When you've hit him enough, he'll cause the stone tower to fall over. Run to the start of the arena, then jump from the sloping platform onto the fallen tower. Run up to Gunter's platform and drop down the hole to the final confrontation.

Arena 5

As you float down, steer over into the third room, with a Gunter snack dispenser. Jump on the button to release a Gunter snack. Pick it up, then throw the snack into the main section of the arena, causing Gunter to chase after it, allowing you to pick up the nuclear bomb from where he was standing. Grab it, then run over the open air vent and jump into the current, drop down onto the platform and use the nuke to open the atomic lock. Repeat this process for the remaining locks and Bones will be freed, and then he'll do something strange with the snack dispenser. Collect the Bones/snack hybrid, then throw it at Gunter. Then simply watch as Gunter's greed proves his undoing.

And, with that, you'll have completed *MDK*. Congratulations. PCG

***MDK* was reviewed in PCG 41, where it was voted our Game of the Month.**



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Magic: The Gathering

MicroProse's PC version of the world's most successful collectable card game is rather good. If you've never played it, however, you'll need these tips to get you started.

PLAYING GUIDE

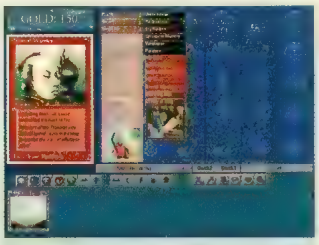
By ANDY BUTCHER

To say that *Magic: The Gathering* has taken the world by storm might, for once, be something of an understatement. With well over a billion cards sold worldwide in several languages, the game's publisher, Wizards of the Coast, has quickly become one of the most successful non-computer-games companies around. Now MicroProse have completed the impressive task of converting the game to the PC, it's likely to become even more popular.

Of course, if you're an old hand at the card game, you'll have little problem jumping straight into the Shandalar section of the game, which is by far the most interesting and challenging aspect of it. If the CD-ROM is your first contact with the game, though, things are a little tougher.

This guide is intended to introduce new Magic players to the most important strategic element of the game – building a deck of spells to use in your quest to save Shandalar from the five arch-mages that threaten its survival. One of the greatest strengths of Magic, both in the card game and the PC version, is the game's infinite flexibility. What follows, then, is not a set of hard and fast rules, but rather a general discussion of basic deck design. It's possible to build very strong decks that completely ignore the advice given here, but to do so requires a lot of experience with the game. These guidelines will help you to create some playable, flexible decks to get you started – but never be scared of experimenting with ideas of your own.

It's often worth paying to avoid the coming duel if you ante one of your best cards.



When starting a new game, improving your deck should be your first priority...

FIRST THINGS FIRST

If you're new to Magic, the first thing you're going to have to do is learn how the game works, and how to play it. Luckily, those nice chaps at MicroProse have come up with a well-written manual that should teach you the basics. Before starting the Shandalar game, take some time to read through the manua and play some games in the Duel section, trying different decks for both you and your opponent. Only once you feel confident that you understand the basics of the game should you start thinking about trying to save Shandalar.

If you're having real problems learning how to play, there are a couple of other options. If you're lucky enough to know someone who plays the card game (ask around, you'll probably find someone), get them to teach you how to play it. Alternatively, pick up one of the Starter Sets of the game, and read through the rulebook. It won't tell you anything about the interface used by the PC game, but it will do a good job of teaching you how to play Magic itself.

DECK DESIGN 101

Okay, so you understand the basics, and you're itching to start saving Shandalar from total destruction. Before you jump right in and start wandering the land, though, it's worth giving some thought to what kind of deck you want to use.

Unlike the Duel, in which you can simply choose from a wide range of pre-designed decks, before beginning the Shandalar game you must choose a colour of cards from the five available. Once the game starts you'll find yourself with a selection of cards of that colour (and, depending on the difficulty level, a few of other colours as well). From this fairly humble beginning one of your main tasks in the game is to gather enough cards to create a powerful, flexible deck (or decks) that will allow you to take on the strongest creatures of the land, and eventually the arch-mages themselves.

It's a good idea, then, to start the game with a clear idea of what kind of deck you want, and then devote your early efforts in the game to putting it together. To do this, of course, you need to understand some of the basics of deck-building.

Nafs Asp
Summon Asp
Whenever Nafs Asp damages a player, it deals an additional 1 damage to that player during his or her next draw phase unless he or she pays 1 before that draw phase.
Illus. Christopher Rush
1/1

Until you're familiar with most of the cards in the game, be sure to take the time to examine the spells that your opponent casts.

SIZE ISN'T EVERYTHING

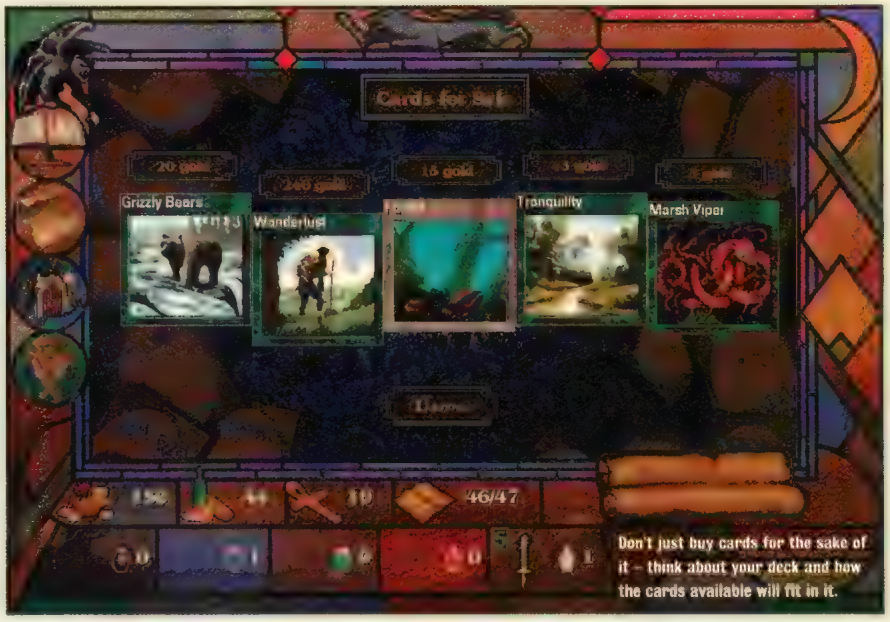
The very first thing to consider is the size of your deck. Setting a limit right from the start

is a good idea because it makes you think more carefully about your choice of cards, and prevents you ending up with a huge deck. Having a load of cards might seem like a good idea, but it's actually one of the biggest mistakes you can make.

One of the keys to a good Magic deck is consistency – the more easily you can predict what cards you'll end up with in your hand, the more you can plan ahead, and the more likely it is that you'll get the card you want when you need it. The larger the deck, the more random it becomes, and the lower the chance of you getting a specific card in each duel.

The minimum number of cards you're allowed in Shandalar varies with the difficulty level, and can be as low as 30. However, too few cards can be almost as dangerous as too many – not only does it limit your deck's flexibility, it also increases the chance of you running out of cards (and thus losing the duel).

So what's the answer? Well, 60 cards is a good size - large enough to allow you some variety (and be unlikely to run out), but small enough to ensure consistency.


Grizzly Bears
Wanderlust
Tranquility
Marsh Viper
46/47
Don't just buy cards for the sake of it – think about your deck and how the cards available will fit in it.

LOOK AT THE COLOURS

The next basic decision to make about your killer deck is which colours to use, and how many. Single colour decks have the advantage of being the simplest to play, and you'll never be stuck with the wrong type of Land for the cards in your hand. However, single colour decks are ultimately one-sided and inflexible. Each of the five colours of magic has its own strengths, but it also has its own weaknesses – and in single-colour decks those weaknesses are exaggerated. Single-colour decks are also vulnerable to spells and effects which target that specific colour.

Multi-colour decks, however, have problems all of their own, the main one being that it's hard to ensure you'll have the right Lands for the cards in your hand. For a basic deck, then, the best idea is normally two colours.

Which colours to choose is largely a matter of taste and style, but you should consider how the different colours work together. The two basic options are to choose colours that compensate for each others' weaknesses, or colours that complement each others' strengths. Green, for example, has a lot of powerful creature cards, and some good creature-enhancing features, as does Black. Red, on the other hand, has the most direct-damage spells like Lightning Bolt or Fireball. So, Green and Black would complement each other, producing a deck with masses of powerful creatures, while Green and Red would compensate for each colour's weaknesses – Green providing good creatures and enchantments, while Red handles direct damage. All the colour combinations have something to recommend them, but it's worth considering how to take advantage of the strengths they provide.

LANDS TO CONQUER

With the colours chosen, the next step is to decide how many Lands to use. Lands provide the magical energy required to cast your spells, and so it's important to have enough. On the other hand, too many Lands will leave you with loads of Mana and no spells to cast.

Once again, there are no hard and fast rules here, but a good starting figure is to have a third of your deck as Lands – 20 cards in a 60-card deck. Again, for simplicity's sake it's best to split these equally between the colours of your deck – 10 of each in a two-colour design.

The rest of your deck, then, should be made up of spells. Once again, there are limitless options here, and a lot will depend on what cards you come across on your travels in Shandalar. However, there are some basics to bear in mind.

In most decks it's a good idea to split the cards (and Lands) evenly between your chosen colours. Once again, uneven splits can work, but they're more difficult to deal with, and you should probably wait until you've got more experience with the game. Likewise, in most basic decks it's a good idea to have a fairly even split between creatures and other spells (Interrupts, Instants, Sorceries, and Enchantments). Creatures are by far the simplest way to damage your opponent (and to protect yourself from your opponent's creatures in turn), and as they stick around until killed they offer good 'value for mana'.

Try to have a range of creatures, including both weak and strong types – a Shivan Dragon is no use until you have enough Land to cast it, and in the meantime your opponent's pesky 1/1 creatures will be picking off your life points. Likewise, try to have some with Flying and First Strike useful powers for attack and defence.

Which other spells you use will largely be determined by what you can find and what colours you use. Never forget, though, that the aim of the deck is to reduce your opponent's life to zero as quickly as possible. There are so many neat cards in Magic that it's easy to get caught up in cool ideas that simply aren't very practical.

Finally, give some thought to artifacts. Unless you're building an artifact deck, you shouldn't use too many of these, but a few can be very useful, serving either to make the most of your deck's strengths, or to compensate for weaknesses.

PUTTING IT ALL TOGETHER

If you start the Shandalar game with a good idea of what kind of deck you want, you're far more likely to succeed. Dedicate yourself to getting as many cards of the colours you want as quickly as possible - if you want Green cards, hang around forests and fight Green monsters, and don't go exploring Islands where you'll end up winning Blue cards. As your deck grows and evolves, experiment with different combinations of cards, and if you have a particular idea you want to try out, remember that you can always use the Deck Builder to create it, then play a few games of Duel to see how it works, before risking everything in Shandalar. Most of all, though, never be afraid to experiment with new ideas and combinations of cards – the more you do, the better your deck will become and the more you'll appreciate the subtleties of the game.

And then you can advance to playing the card game itself. PCG

MicroProse's *Magic: The Gathering* was reviewed in PCG 35, where it was awarded a Game of Distinction accolade and 91%.

Foul play

Shame on you. You naughty, naughty people.

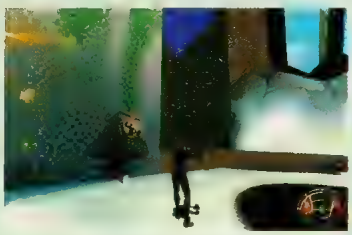
What makes a perfectly normal, sane games player stoop to the dark depths of the cheater's pit? Who knows? Who cares? Just do it.

By TREVOR WITT

MDK

If you need additional help to that which is available in our playing guide on pages 126-129, here are the first cheats to this extraordinary game. Each cheat can be used only once per level.

HEALME – 100% health
INEEDABIGGUN – Gatt power-up
TORNADOAWAY – Twister power-up
HOLOKURTISFUN – Decoy power-up
ILIKETOLOB – Mortar power-up
NASTYSHOTTHANKS – Homing sniper grenade power-up



BLOOD

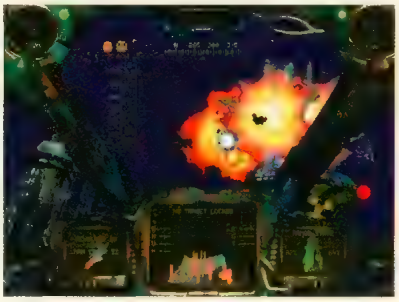
The shareware version of *Blood* had been available for download on the Internet for just a few days when a complete list of cheat codes appeared on various gaming sites. Not nearly as exciting to play or as graphically stunning as *Quake*, *Blood* is, nevertheless, a fine first-person-perspective shooter. So for those of you struggling to make progress, these cheat codes, which can be typed in at any point during play, should assist you in your bloody quest.

BUNZ All weapons, ammo and guns akimbo
CALGON – Level warp
COUSTEAU - 200 health and scuba suit
EVA GALLI – Toggle clipping
FUNKY SHOES Super-jump
GOONIES – Gives you the full map of the level
GRISWOLD – All armour
I WANNA BE LIKE KEVIN – God mode
IDAHO – All ammo and weapons
JOJO – Delerium
KEYMASTER - All keys
KEVORKIAN - Suicide
KRUEGER – Sets you on fire. Displays "Flame Retardant"
LARA CROFT – All weapons and infinite ammo. Displays "Lara Rules"
MCGEE – Sets you on fire. Displays "You're Fired"
MONTANA All ammo, weapons and items
NOCAPINMYASS – God mode
ONERING – Invisibility
SATCHEL – All items
SPIELBERG – Level warp and disables all cheats
SPORK – 200 health

ARCHIMEDEAN DYNASTY

Blue Byte's post-apocalyptic underwater strategy simulation received a lukewarm 69% when it was reviewed in issue 38. However, some of you seem to be having difficulty completing many of the more challenging missions, so we put our top sub-aqua expert on the case and she surfaced with some rather salty solutions to your problems. To use these codes, cover with plenty of salt and vinegar and hold down both CTRL keys while you press the number:

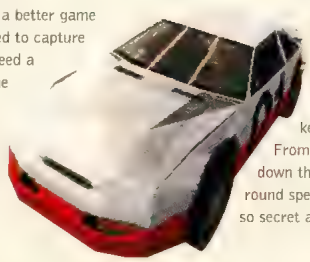
0 – Finish mission
1 – Invincibility
2 – Unlimited torpedoes
3 – Unlimited cannon ammo



DESTRUCTION DERBY 2

Psygnosis' bash-'em-up sequel was a better game than the original but somehow failed to capture the destructive spirit. Still, if you need a little help, type in these codes on the title screen.

MACSRPOO – All the tracks and all the bowls (those wacky programmers, eh?)
CREDITZ! – See the credits as if you had finished division one



DIE HARD TRILOGY

Electronic Arts' movie tie-in epic was well received in its review in issue 41 of PC GAMER, with an impressive 86% overall score. The three sections contained in the game offer very different gaming challenges and hopefully these cheat codes will help you in your high-score quest. Bruce would be proud. Pause the game at any time and then enter the following codes.

Die Hard 1:
REAR Enemies with handguns shoot between their legs
RUDE God mode
REDO 50 grenades
REED – Fat mode
DEAD Sacrifice to gods
10 As and 4 Rs Skeleton mode
RUDDER Unlimited anything (type it in once to get the shotgun, twice to get the P5, etc.)

Die Hard 2:
DARE God
LARD Aim only moves when you want it to move
RUDE – Type it in once to get any gun and twice to get god mode
DEAD – Skeleton mode
RELOAD – Lots of grenades and missiles

Die Hard 3:
EOXOELXDL – Knocks cars further back and sometimes flips them over
LOROEAXAR Disables turbo

COMMAND & CONQUER: COUNTERSTRIKE

In case you missed the review of this excellent mission disc last month, the key to unlocking the secret 'It Came From Red Alert' ant missions is to hold down the left SHIFT key and left click on the round speaker graphic on the main menu. Not so secret anymore perhaps. PCG

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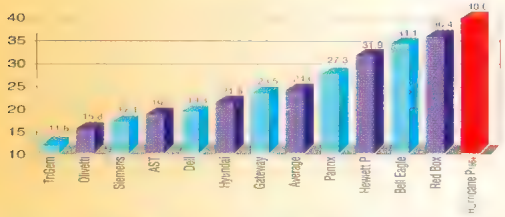

In the September 96 issue, PC Magazine (Ziff Davis UK) tested 31 different P166 class PCs. The Graphics WinMark 96 test evaluates a PC's VGA performance. The AVERAGE performance of all 31 PCs was 24.0 - With the lowest at 11.6 - The highest was 36.4. The Hurricane P166+ Graphics WinMark 96 is over 40.0 giving it a HIGHER performance than any of the 31 tested PCs.

The Winstone 32 v1.0 benchmark gives the OVERALL performance for a complete PC system. The Hurricane P166+ Performance of 98.0 is 19% faster than the average of all the 31 PCs which scored Winstone 82.5. The top performer was only 9% faster but at a retail price of £3,049 (inc Vat).

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504D

Q&A

Find the solutions to your gaming worries with yet another fine Q&A section. Grab a cup of tea, put your feet up and all will be revealed. And remember, the sender of the best hints, cheats or walkthrough each month will win a prize. By TREVOR WITT

Customer Help-Lines

Most publishers offer their own games support service, so if you're stuck on one of their titles, it's always worth phoning them directly.

Acclaim	0171 344 5000
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Elite	01922 55852
Gremlin	0114 275 3423
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GameTek	01753 553445
(ask for customer support)	
Infogrames	0891 244444
Interplay	01235 821666
(ask for customer support)	
MicroProse	01454 893 900
Ocean	0161 839 0999
Psygnosis	0151 282 3333
Sierra	01734 303171
Virgin and LucasArts	0171 368 2266

DISCWORLD 2

Q I have followed your instructions on *Discworld 2* up to the final action in the epilogue, but I'm stuck at the part where you say to "use the granny's broom on Rincewind". When I do this, Rincewind simply says that I'm 1/10 of the way there. Please help!

Matthew Flitton, Royston

A We may not have been exactly clear about how to complete the final puzzle in our earlier solution, so here goes again. First, look at the raven. Ask Granny Weatherwax about the raven and then get her broomstick. Next, talk to Dibbler using the smile icon and ask him about bladders. Use the canteen on the bladders and put the bladders in Rincewind's pocket. Use the broomstick on the TOWER and then sit back and watch the action.

ULTIMA VII

Q Can anyone please help me in the sub-game 'Forge of Virtue' in *Ultima VII*? I'm trying to finish the Test of Truth and have found and used seven disappearing lockets. There is a locked chest in a passage on the right hand side of the cave which has 'fire fields' and invisible routes through it. I can enter the passage, but when I try to unlock the chest I am blocked. I suspect that the chest contains an item essential to the completion of the test.

Eric Watson, Northallerton

A The Test of Truth is actually very simple to complete and you are, in fact, making things more difficult than they need be. As it is a truth test there are plenty of false items and locations to put you off the correct track. First of all, talk to the mage statue in the hall and he'll teleport you to the test. Walk down the corridor until you come to a large hall. Walk through the hall (beware the centre of the hall where a corpse lies) to the west corridor and you will see a hood lying on the ground. Walk straight into the north wall above the hood. Make your way to any room that contains a locket. Get it and you complete this test. You should now be bestowed with 30 Int. and 30 mana.

POLICE QUEST 3

Q I'm currently on the fifth day of *Police Quest 3* and I'm up to the part where you have to draw the pentagram onto the map. I know that I'm supposed to take the four streets where the murders occurred and then use these to mark out positions which will then link to form a Pentagram, but when I've marked them correctly nothing seems to happen. Would you be able to tell me exactly where I have to place the points, because no-one else seems to be able to?

Jonathan Slack, South Australia

A One obvious problem here is that you don't seem to have collected all the evidence. Basically, there are five points to the Pentagram and you are missing the final location to complete this puzzle. Here are the five points you require:

341 East Rose
280 West Palm
392 South Sixth Street
276 West Rose
200 East Palm

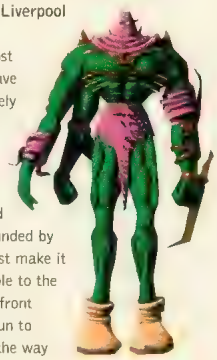
This final point, 200 East Palm, is the key to the next section of the game, so hurry on down there.

REALMS OF THE HAUNTING

Q I am stuck on the final level of *Realms Of The Haunting*. Can you please guide me through the final chapter, The Devil Take The Hindmost? It is incredibly hard and I keep dying almost immediately. Hope you can help.

David Wilkes, Liverpool

A First and most important, save the game immediately as it will probably take several attempts to get this right.. You are in the courtyard of the house, surrounded by nasties and you must make it as quickly as possible to the hall and out of the front door. Have a trial run to remind yourself of the way



Over To You...

This month's prize goes to Stephen Foster, who sent in a fine (if a little tricky to get working) cheat for Maxis' *SimTower*. If you think you can answer any of the following questions, send your answers to 'Over To You' at the usual address. And there's always a prize available for the best submissions.

A This is a cheat for Alan Barker, who is having problems with ***SimTower*** (PCG 42). Save your game with the name CHEAT. In MS-DOS type DEBUG CHEAT.TDT (in the *SimTower* directory) and add the following to the file:

-e 102 5
-e 106 ff
-w
-q

This should give you a five-star tower and plenty of money.

Stephen Foster, Cheshire

A Here is some help for Wim and Lis, who are stuck in ***Sam & Max*** (PCG 37). To make the flashlight work, take the black light bulb from the office at the beginning of the game. Win the game called Wak-A-Rat in the carnival. Use the bulb with the torch to make a flashlight.

Levent Kutukculer, Turkey

Q Please could you tell me some cheats for ***Descent 1*** as I can't seem to be able to get past Level 5. So it would be a big help to have some cheats.

Luke Sims, Ipswich

Q Please could you help me on ***Wolfenstein 3D***? I'm really stuck on the last level and keep dying before I reach the end. My friends have told me that there is a cheat for *Wolfenstein*, but no-one seems to know what it is. If you could tell me what the cheat is, I would be very grateful indeed.

Richard Brown, Farnham

Q I am stuck on a level called 'That Old Devil Moon' on ***Star Trek 25th Anniversary***. I have beamed down to the surface of the moon and have come across a large door. I have tried opening it, but Spock says that I need a code which had some significance to them. I do not know this code and I would appreciate any assistance you can offer.

Jason Barnes, Brighton

Send your questions, answers, tips, cheats or game solutions to us now! Mark your envelope clearly with Q&A, Over To You or the name of the game you've tipped and send it to: PC GAMER, 30 Monmouth Street, Bath BA1 2BW.

-- go through the double door in front of you and keep mostly left. We definitely recommend that you don't hang around to fight with the James Bond look-alikes, as there are far too many of them and you'll waste precious ammo. Save before you burst into the hall because the Grandfather of all monsters is waiting for you there. Find yourself a good defending point - the best spot is the column to the left of the door – and wedge yourself in the corner so that it can't get at you. Then unload everything you have at him and when he finally dies (this might take a while) go through the door. Sit back and enjoy the well-earned finale.

STAR CONTROL II

Q I recently bought *Star Control II* on budget, and, after sailing effortlessly through the first few encounters, found myself utterly stuck with the problem of the Shofixti. I have persuaded Tanaka not to kill me on sight, and I know that I have to find a certain creature for Admiral Zex before I can get a female to re-populate the Shofixti race. But the problem is, where on earth do I find the creature that Admiral Zex requires? I have looked all over the place and my only clue is that "it basks in yellow light upon its demise, and resides in the constellation Linch-nas-ploh", which is not much to go on considering there are some 200 constellations in the game. I also have a few other queries about the game, namely, can I trust the alien race named the Orz, where do I find the Chmrr, and where do I find the constellation Alpha Pavonis? While a complete solution would be nice, any help you can offer will do.

Shaun Green, Shenfield

A First, the creature for Admiral Zex can be located on Delta Lyncis I, coordinates 570.4;979.5. It is easily found by the fact that it's huge and very aggressive! The Orz race can generally be trusted, but as they don't really play a huge role in the completion of the game, you shouldn't worry about them too much. The Chmrr, which is a combination of the Chenjesu and Mmrnmhrm races, can be located on Procyon II and you must use the 'Sun Device' to accelerate their joining process. In return you will receive unlimited RUs, the designs for the Chmrr Avatar (the best alien ship) and an enhanced bomb with their crystal technology. And finally, Alpha Pavonis VII is located at 56.2;800. PCG

Below is a list of all the games previously tipped in PC GAMER. They all now appear in a database on our cover CD (see page 8), but the full illustrated versions of our playing guides are available from issue 26 onwards. To order a back issue of PC GAMER turn to page 141 or, if you've got a credit card, simply phone (01225) 822511...

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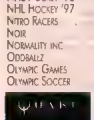

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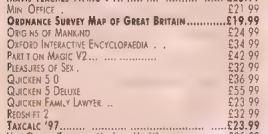

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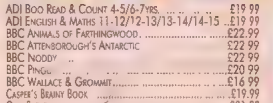

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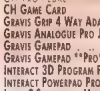

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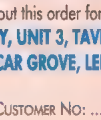

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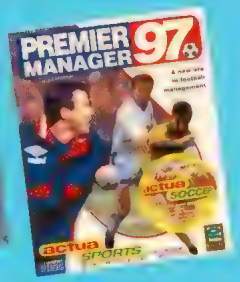

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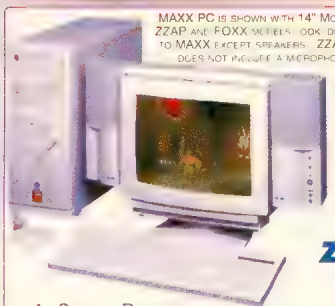

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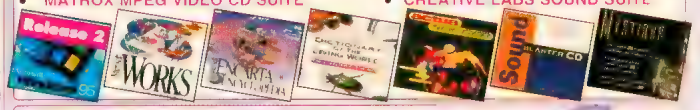

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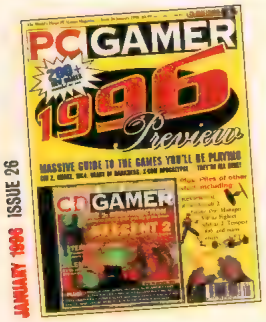

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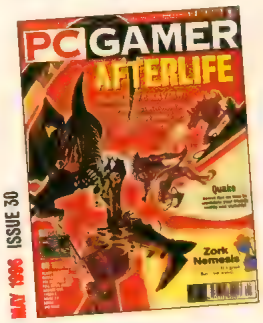

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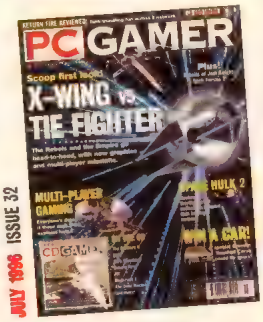

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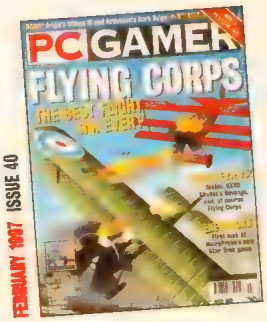

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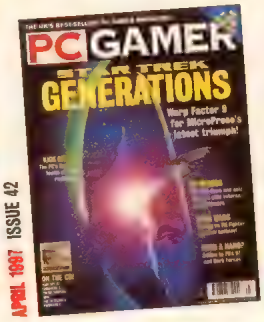

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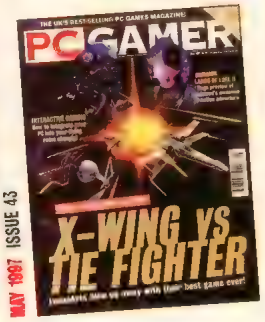

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A PC for t

Buying a faster processor every couple of years won't keep you up to date with the revolution in the design of new PCs. The millennium PC will be a radically different beast to today's, but many of the changes are not far down the line.

By SIMON WILLIAMS

"BANG A NEW PROCESSOR IN your PC, mate, and you've got all the advantages of these new machines. 'Ere, it just so 'appens I've got just what ya need in me pocket. 'Undred quid to you, 'cos I can see ya know what ya buying."

Apart from the fact that you should never buy anything from somebody with an obviously false accent, the basic idea that a PC's performance depends only on its processor is, in the vernacular "a load of old tosh, Guv". It depends just as much on the processor's secondary cache, the graphics adaptor, the speed of its memory bus and the transfer rate of data to and from peripherals such as hard drives, CD-ROMs and sound cards. All these things are set to change, though, and while some of the changes won't come cheap they'll definitely help your system race along.

Intel's recent promise to provide a PC performance increase of ten times in three years relies on a lot more than the Pentium II, however pacey that processor looks – and it looks really pacey. Here's how all the different components tie together to produce a faster PC.

Secondary cache

However fast a processor is, it can't do anything without fetching data from memory and returning it there once it's done things to it. This was fine when both processor and memory bus were running at 66MHz, as the chip was never waiting for data to arrive. As processor speeds have increased, however, memory bus speeds haven't and we now have processors of

On the side

Some thoughts on recent technical developments...

Five get down to basics

Just when everybody's cursing Microsoft's DirectX 3, the company has announced the release of the beta of version 5. There's a lot of potentially useful stuff in DirectX 5, but this usefulness really depends on people being able to install it properly and find stable drivers for the sound and video cards they intend to use. That hasn't always been possible with earlier versions.

Microsoft claim DirectX 5 will offer an "improved user experience". To achieve this, the DirectX set-up will make use of a "database of known safe and robust driver upgrades eliminating potential driver incompatibility problems for the consumers". Glad to hear it after the endless problems the current versions have caused.

If and when it all comes to pass, DirectX 5 should also provide:

- Improved 3D performance through the DrawPrimitive Application Program Interface (API). This is a low-level extension to Direct3D, which speeds up polygon handling – nearly all 3D games spend their time handling nothing else.
- Access to new advanced hardware. The new APIs will support hardware goodies like MMX, the Universal Serial Bus (USB), 3D acceleration, the rendering features developed as part of Microsoft's Talisman project and force-feedback joysticks. These are the gadgets I've mentioned before that can provide resistance or vibration through the stick, to make control seem more realistic.
- Better sample code, better gaming device support and instructions in 28 languages. While this won't help gamers directly, it'll make it easier for programmers to work with DirectX, so games can be developed faster.

The second beta should be available by the time you read this and the code is with developers already. Expect to see DirectX 5 games by the end of the year.

A Web of wolves

If you enjoy submarine strategy games, you should take a look at *Iron Wolves*. This is a 3D Internet Naval Simulator, which has already tickled the beards of 25,000 old sea dogs, or young pups, in its beta phase. For £6 a fortnight – no other charges, apart from your phone bill – you can play U-boat, corvette, destroyer or heavy submarine and watch in slightly blocky 3D what happens to the other

he year 2000

up to 200MHz running with memory buses of around a third this speed.

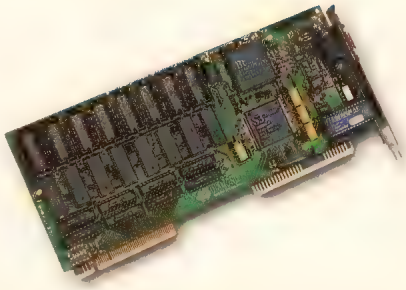
The way designers have got around this is to put a small amount of much faster memory, running at a faster clock rate, between main memory and the processor. This small pool of fast memory, known as the secondary cache (there's an even smaller, faster amount, known as the primary cache, built into most processor chips), acts as a buffer. As long as the processor only has to fetch data from the cache, it won't have to wait for its slow main memory.

New designs such as the Pentium Pro and now the Pentium II have put this secondary cache on a separate cache bus, which runs at either half speed (Pentium II) or the full speed (Pentium Pro) of the processor. Although the Pentium II's cache is slower than the Pentium Pro's, there's twice as much of it as in the equivalent Pentium Pro and it's much cheaper to make. It gives the Pentium II a bigger performance kick than any Pentium.

AMD's K6 processor still relies on the older cache system, but has hinted that later versions could be fitted with a cache chip underneath the processor, connecting in directly to the bottom layer of the processor's silicon by what it charmingly calls a 'backside' connection. Both Intel's and AMD's techniques would result in significant performance increases.

Graphics

The speed of moving data from one place to another is just as vital in a graphics adaptor as in the processor. Graphics chips have to communicate directly with the main processor



VLB based video cards like this were all the rage just three years ago. Now they already belong in a museum.

all the time. They started life doing this through the ISA expansion bus, typically running at around 8MHz (again, at one time the same speed as the processor). When this became a bottleneck, Intel introduced the PCI bus, running at up to 66MHz.

This is what graphics card makers use at the moment, but again it's restricting the overall speed of the video system. So Intel have come up with another improvement, the Advanced Graphics Port (AGP), which is a separate bus, just for the video. The 2X mode of this bus, the one that will appear first, will run at 133MHz, but other factors will combine to give it a bandwidth of 533Mb/s. This is four times the bandwidth of PCI, which can only handle peaks of 133Mb/s.

Bandwidth is what it's all about in graphics terms, particularly in 3D environments. Intel are already working on a 4X mode for AGP, which will offer a bandwidth of over 1Gb/s and will be included in the AGP specification due for completion by the end of this year. Although the 4X mode will first make its appearance in graphics workstations, it's expected to move down to the kind of desktop PCs we use within a year or two. With the increasing complexity and higher resolutions of games, this evolution is vitally important to keep the PC's internal data flowing smoothly.

Memory and memory bus

There are two things happening in the memory world which will help speed up next year's PCs. The first of these is a move away from EDO memory, which was heralded only a year or so ago as the way to faster RAM. Synchronous Dynamic RAM (SDRAM) is what's coming along now and already several Far Eastern memory plants are gearing up to produce this rather than EDO. Many of the key PC producers will be fitting SDRAM to their new machines by the end of the year.

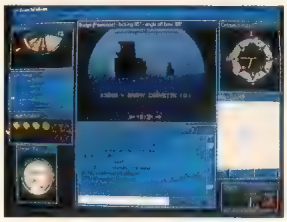
Physically, SDRAMs are all 64-bit wide and are designed as Dual Inline Memory Modules (DIMMs), so they won't fit in current SIMM sockets. Some recent system boards have both SIMM and DIMM sockets, but for only one or two DIMMs. This restricts the combinations of memory you can add to a new PC, though once the shift has been made away from SIMMs, you'll probably see system boards with more DIMM sockets on them.

At the moment, you may not see much performance advantage in SDRAMs over EDO memory, but as new support chipsets come out, such as the VX and FX chips from Intel,

(Continued on page 145)

vessels in your game. You can play a trial game, as a 'non-attacking' tanker, for free, by browsing to `http://www.on-line.co.uk/iwdir/member.html`, though as an undefended tanker your main trial would seem to be staying out of the way of everybody else.

As an aside, I was touring Helsinki recently with a bus-load of other journalists – it was a work trip, honest – as the Finnish guide explained about a local entrepreneur who had bought two Russian subs as curios, after the changes in Eastern Europe. He moored one in Helsinki harbour and tried to sail the other to England, to set up a similar attraction in London. "However," said our guide in broken English, "halfway over it just went away; down under the water." Almost with one voice, the assorted journos erupted with, "But that's what submarines do."



A quick glimpse through an enemy periscope shows the end of yet another trial game of *Iron Wolves*.

The second Apocalypse

Not content with its first implementation of the PowerVR 3D accelerator, VideoLogic have launched Apocalypse 3Dx. The new card is based on NEC's recently released PCX2 3D processor and is claimed to offer a 50% performance increase over the original add-in card. It also supports higher resolutions and produces a substantially improved 3D image, through the inclusion of adaptive bilinear texture filtering – no, don't ask.

The new PowerVR comes with four games: *Wipeout 2097, Ultim@te Race, Resident Evil* and *MechWarrior 2*. The price stays the same at around £139, but the best bit is that existing owners can upgrade for half of this, £69. VideoLogic won't even be asking for the old card back. Contact VideoLogic on 01923 260511.

Breaking 300

After all last month's talk of new processors and this month's Systems detailing other improvements to the PC, it should come as little surprise that Intel are still making additions to their processor range. The company has now announced a 300MHz Pentium II, which will be available in the summer. A Pentium II running at this speed wasn't expected until the end of the year, ☛

Advantage! 9409

It's not often I come across a machine obviously intended for gamers and prepared to make little compromise. This new AST Advantage! shows all the right credentials, though, and as long as you have a lot of money to spend, it should be all you need.

It's big and needs a crane to lift it onto the desk – this is not a machine that's going to blow over in a strong breeze. As well as the 200MHz Pentium MMX processor, which gives it all any PC can currently have – though Pentium II and K6 may change this – there's 32Mb of main memory and a massive 4.1Gb hard drive. This is fast as well as big, with an access time of only 8.6ms. The 16-speed max CD-ROM drive is also quick, and the four components work together to give the package a massive punch.

And there's a lot of punchy software supplied with the machine. Sega's *Virtua Fighter* has more than a little feel of the arcade version, given the 17-inch display on AST's own ASTVision monitor and the sound pumping from a trio of Altec Lansing speakers. These are the biggest beasts I've yet seen on a PC and there's a bass wallop from the sub-woofer which is er... refreshing. The satellites on this set-up weren't completely clear, but I'm willing to believe the problem's isolated to this machine. Also, as a machine of the future, the system supports Dolby Surround Sound.

It's far from cheap but this baby will keep you in gaming luxury for a year or two.

The software bundle, particularly on the games side, is better than just about any retail machine I've looked at, and caters for a wide range of tastes (see right for more details). The serious side is also well catered for with Works, Quicken and PagePlus slotting together very well. Benchmark results showed the Advantage! up well and with this specification it's likely to remain a wonderful well equipped PC for several years to come.

Supplier: AST
Contact: 0990 611611
Price: £2,299
Processor: 200MHz Pentium MMX
Secondary cache: 256K
Memory: 32Mb
Hard drive: 4.1Gb
CD-ROM: x16max Torisan
Graphics card: S3 Virge, 2Mb
Monitor: 17-inch ASTVision 7L
Other bits: Yamaha wave-table sound chip, Altec Lansing speakers, 33.6Kbps modem, MS SideWinder gamepad
Bundled software: Windows 95 OSR2, Works 4, Quicken, Page Plus, Encarta 97, Virtua Fighter, Bug, Helicops, EF2000, Wireplay and Line 1 trials, MS Golf 3, AA Days Out, Ultimate Human Body, 3rd Dimension, Learn Windows 95

PC GAMER Verdict 93%

but yields from Intel's initial production runs have been so good, the company expects to be fulfilling orders within a few months.

It's not all rosy for gamers, though, as the fastest PC processor on the planet will initially only be available in high-end (for high-end, read £5,000 plus) graphics workstations. Add to that the likely cost, $1,981 (around £1,240), even in quantities of 1,000 off and you'll start to get the message that this isn't Packard Bells' processor of choice for sale in Dixons next Christmas. Mid 1998 may well be a different matter...

The latest, greatest, big, black processor module. Intel may be shifting the goalposts, but their 300MHz Pentium II is an impressive striker.

Really flat screens

That Finnish trip I mentioned was to see Fujitsu – mainly their corporate PCs and notebooks, which are not generally in the price range for games (though the company's consumer machines certainly are). One snippet that emerged was the Japanese giant's continuing research into LCD and gas plasma flat screens. Fujitsu expect to halve the cost of their LCD displays for desktops in the next two years and have experimental screens on show in Japan at up to six foot by four – just imagine *Tomb Raider* on that.

Abort, Retry, Fail

Q:\> I'm trying to connect two computers together to play games, but I'm unable to do this. I have bought a Hypertec Network Adaptor, which runs fine in Windows 95, but not at all in DOS. I rang Hypertec and all they told me is you can't run a network in DOS, which I think must be untrue. I haven't got anything in my CONFIG.SYS or AUTOEXEC.BAT and I have no software from Hypertec to get it to work in DOS – it uses NE2000 options in Windows 95. I've tried to get this working in DOS for six months and it's driving me round the twist.

David Galloway,
via the Internet

A:\> *The first thing to make clear is that you've bought two Hypertec adaptors, not just one as you say in your letter, haven't you?*

If the cards work under Windows 95, there's nothing wrong with them and Hypertec are basically correct in what they say. Windows 95 has its own drivers for NE2000-compatible cards, like the Hypertech, and can be told to install the correct networking protocols to get it all working. These all work at the MS-DOS prompt, too, but not when you restart in MS-DOS mode. Then you need DOS-based networking software, like personal NetWare from Novell. Without software like this, you won't have much success with your network.

Q:\> I'm the very proud owner of the following super ninja PC: Pentium 166, 32Mb, 2.2Gb and 170Mb hard drives, SB16, Matrox Mystique 4Mb, Mitsumi FX800 CD-ROM drive and all the other gizmos. The problem is my CD-ROM drive, which refuses to work smoothly as expected. It speeds up so much it makes the whole machine vibrate, then it slows down and does it all over again. It only reads a little data, very slowly and often gives read errors. Can you help?

Mario Marzagao,
Lisbon, Portugal

A:\> *There's a lot more to Mario's letter, showing that he's tried all the obvious things, like changing the drive, changing the slot the sound card is in (the CD-ROM drive runs from the SoundBlaster) checking the cables, running the CD-ROMs in other machines. All of these things check out okay. He also says he's tried other CD-ROM drives, but they all start exhibiting similar faults after the first few days. This problem isn't a common one and I'm suspicious the controller on the sound card may be delivering a faulty signal to the drive, or even that the regulation of the supply voltage from the power supply may be faulty, producing odd effects. The fact that it works okay for the first few days might mean that some component is struggling to cope with an odd voltage and eventually gives up. You could try running your CD-ROM drive in a friend's PC, if you have one that will let you dismantle his/her machine!*

Q:\> I'm in a bit of a dilemma. In my AUTOEXEC.BAT file, on the 'Smartdrv' line, at the end I wrote '/L /V /R', after reading the help file. I hoped it would improve the performance of my PC, but to my dismay when I restarted my machine, under the system configuration table it said "Invalid system disk, replace the disk and then press any key". I didn't have anything in the drive. Now I can't do anything! I can't get into Windows 95! Please help before my Dad finds out.

Amit Sharma,
Heston, Middx

A:\> *I'm afraid writing here will never be fast enough to help avoid your parents, unless they work the oil rigs. Obvious things to do in this case are to add the word REM to the start of the Smartdrv line and see if the system then starts up. SmartDrive serves no purpose at all under Windows 95, which has its own disk caching system.*

If that doesn't work, try renaming CONFIG.SYS and AUTOEXEC.BAT (but remember the names so you can reinstate them). Windows 95 should start up without any configuration files at all. Once you've got it running, start reintroducing instructions in new versions of the two files, until you find which line is causing the problem.

Q:\> I have purchased a game that requires a CD-ROM, a mouse and 582K of base memory. Unfortunately, with my mouse and CD-ROM drivers loaded, I have only 575K available. I've used MemMaker, but still can't get it any higher. I've heard of a product called QEMM Gamerunner which could help, but it's a bit expensive for one game, so can you help?

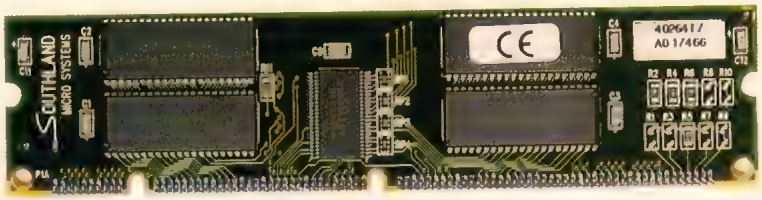
Richard Cartright,
Leicester

A:\> *A lovely hark back to the joys of DOS's past! Richard enclosed a floppy with copies of both configuration files on it. I couldn't see anywhere in either of them where more memory could be saved, except the Display and Mode commands. You could try REMming these lines out, but I don't think you'll gain much. A copy of QEMM Gamerunner should only cost £20 to £30, and could help with other games – there are plenty that need more than 575K to run.*

Send your technical questions to: Abort, Retry, Fail?, PC GAMER, 30 Monmouth Street, Bath BA1 2BW. Or e-mail them to: pcgamer@futurenet.co.uk.

you should see an improvement. So why introduce SDRAMs if there's little performance benefit in the short term?

In the same way Intel have introduced Slot One as the new design for processor modules (so they can increase the clock speed without having to redesign the system board), so SDRAM is easier to run at faster speeds than EDO memory. There's already a proposal, again from Intel, to increase the speed of the system bus – the bus which communicates with the memory. It currently runs at 66MHz, but Intel suggest taking it to 100MHz. AMD agree and have licensed a chipset to do it. If you take the memory speed up by a third, you will see an overall increase in your PC's speed – even when it's using the same processor.



EDORAM is already out of fashion. 'Faster' and 'more' will be the keywords for the coming few years.

Peripherals

The third main area of improvement that will lift the whole PC platform is the Universal Serial Bus (USB). This is a new way of connecting peripherals – everything from printers to modems to joysticks to speakers. Most new PCs have a pair of these sockets at the back, but this should be more than enough to connect all these add-ons at once, since you can 'daisy-chain' them. This means you can plug one peripheral into the back of another, making a chain with only the nearest plugged into the PC itself.

This is a great system, but as yet there are very few peripherals designed to take advantage of it. Although there have been a few examples of USB add-ons, take-up of the system has generally been very poor – even Intel are disappointed. However, the fact that so many PC makers have adopted it should force the issue and give faster access to all kinds of useful home/games goodies.

In conclusion

When you take all these factors on the performance of a PC into account, you can see how improving all of them together will have an effect over and above anything a change of processor could do. We've simultaneously come close to the limits of processor clock, memory bus and graphics bus speeds in current Pentium PCs, but ways have been found around all these limitations.

The process of changing from the Pentium/EDO/PCI machines of today to the Pentium II/SDRAM/AGP PCs of tomorrow will mean a lot of adaptation, but that's been the history of the PC all along. Its flexibility has been its strength, but we all need to start saving now if we want to keep up with next year's upgrades. PCG

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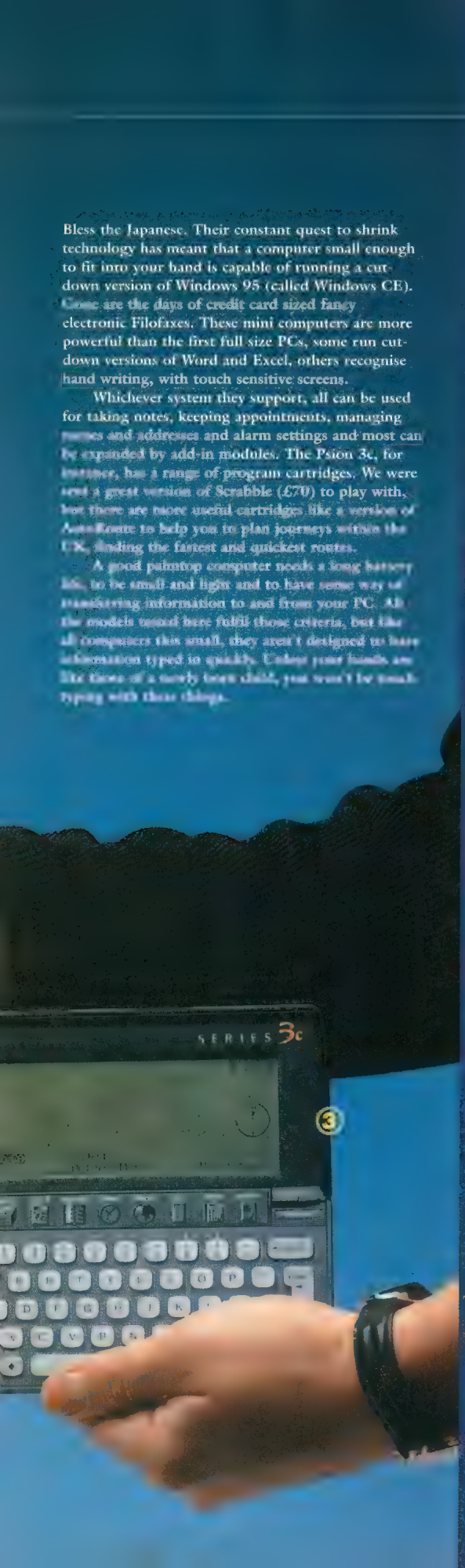
If you too are fed up of missing extremely important meetings with drinking friends and your life is represented by lost scraps of paper, consider getting an electronic organiser.

By STEVE OWEN

Bless the Japanese. Their constant quest to shrink technology has meant that a computer small enough to fit into your hand is capable of running a cut-down version of Windows 95 (called Windows CE). Gone are the days of credit card sized fancy electronic Filofaxes. These mini computers are more powerful than the first full size PCs, some run cut-down versions of Word and Excel, others recognise hand writing, with touch sensitive screens.

Whichever system they support, all can be used for taking notes, keeping appointments, managing names and addresses and alarm settings and most can be expanded by add-in modules. The Psion 3c, for instance, has a range of program cartridges. We were sent a great version of Scrabble (£70) to play with, but there are more useful cartridges like a version of AutoRoute to help you to plan journeys within the UK, finding the fastest and quickest routes.

A good palmtop computer needs a long battery life, to be small and light and to have some way of transferring information to and from your PC. All the models tested here fulfil those criteria, but like all computers this small, they aren't designed to have information typed in quickly. Unless your hands are like claws of a newly born child, you won't be touch-typing with these things.



1. Velo 1 (2Mb)

Around £600 – Philips 0171 222 0833

There's been more imagination spent on the aesthetic design of the Velo 1 than the other organisers reviewed on this page. But it isn't just looks – there's plenty more under the bonnet too. Your extra pennies go towards 4Mb of memory, all the wonder of Windows CE and bonus functionality. It's all ready to connect to a mobile phone for e-mail, Web and faxing, and even conforms to the Short Message Service standard, where mini e-mails can be sent to GSM mobile phones. Like the Pilot (see right), it comes with a docking port and all the cables and software needed to transfer data to and from your PC, and with the Pocket Word and Excel included, this could prove very useful. **83%**

2. Palm Pilot Professional

Around £230 – US Robotics 01734 228200

To keep the Pilot small and cheap, US Robotics have foregone a keyboard in favour of touch screen technology. Each function is represented on-screen by a small icon. Tap it with the stylus included and you're away. You get information into the Pilot in two ways: either by utilising the crude form of hand-writing recognition (where you enter single characters using stylistic and easy-to-learn letter symbols), or by typing it on your PC and then downloading it to the Pilot using the included docking station. It keeps the Pilot very small, and although it isn't as function heavy as the Siena, it is more convenient. You can even send and receive e-mails with it, provided your desktop PC can. **86%**

3. Psion 3c (2Mb)

£400 – Psion 0990 134224

Hugely popular and successful, the Psion was the first palmtop to provide powerful applications, programming abilities and expansion slots in something so small. Now updated to the 3c, the basic unit should provide all the functions you would reasonably require. However, it is starting to look a little expensive these days. You must pay about another £60 to buy the PsiWin package to connect it to your PC, and although the interface is clear and simple, you can't help but expect it to be equipped with a touch screen. It isn't. The Psion 3c is a lovely piece of kit, but the competition has caught up very quickly. A great version of Patience is included. **77%**

4. Siena (1Mb)

£230 – Psion 0990 134224

After complaints that the Psion 3c was too expensive, Psion have produced a cut-down version. The Siena is half the price, half the size and half the weight of its big brother, but thankfully not half as capable. Instead, this fills in some of the middle ground between the £20 credit card sized address books you get from Argos and a fully fledged computer, providing PC linkage (for the extra £60), together with some powerful applications and a simple programming language. The screen is much smaller than that of the 3c, with the extra space filled with a useful numerical pad. The buttons are even smaller than before, so cancel your place on that touch-typing course. **81%**

Glossary

PDA – Short for Personal Digital Assistant, a fancy term for these diddy computers.

Windows CE – A cut-down version of Windows 95 for small computers. It normally comes with Pocket Word, Pocket Excel and Pocket Internet Explorer so that you can 'work' (ugh), surf on the Web, and send e-mails and faxes in familiar surroundings. However, although it looks just like Windows 95 (but in monochrome), it won't [illegible] run *Red Alert* on these things.

GSM – International digital mobile phone communication standard, where any GSM equipped phone can be used in any country supporting GSM. For instance, while in France, your phone suddenly piggy-backs onto a French service provider, so that you can still make and receive calls using your normal phone number. The [illegible] you can send and receive e-mails and faxes from anywhere in the world.

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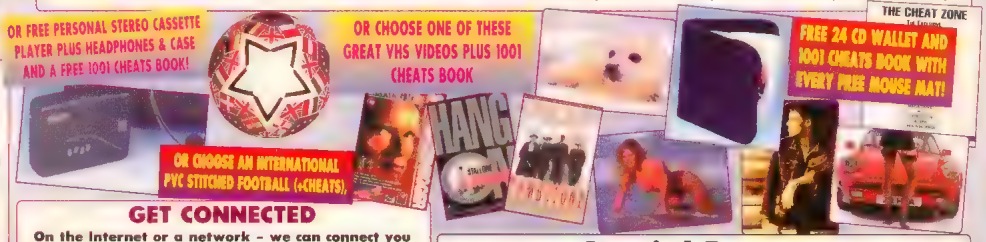
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WIN! A Pentium

Our appetites were whetted for Gametek's *Dark Colony* back in March when it was the subject of a Scoop preview. Little Mark was almost wetting his plastic pants with excitement after seeing this real-time strategy game in action and he knows a good game when he sees one.

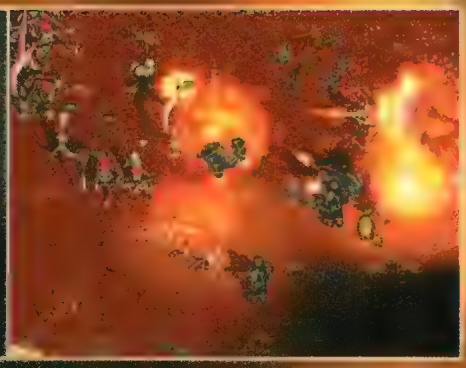
Although the words 'real' and 'time' and 'strategy' are currently the most common in any PC games magazine, we have reason to believe *Dark Colony* will really stand out from the crowd when it's released in September. For a start it looks gorgeous – with larger than normal sprites, magnificent explosions and excellent real-time lighting effects. But where *Dark Colony* really looks like stamping its foot on the surplus of half-baked *C&C* clones is in the battle sequences. Gametek have put a huge amount of effort into making the combat as intense as possible and the resulting action on the battlefield is truly awesome, featuring mushroom clouds, smoke, and the charred remains of robots and alien invaders.

Obviously only a prize of tremendous quality would do justice to this potentially great game. So, in a move which displays unparalleled altruism, as well as a worrying disregard for their own money, Gametek went out and bought a PC to give away to one lucky reader. The PC? A Pentium 166 MMX with a whopping 32Mb RAM no less, plus a modem to fully exploit *Dark Colony's* multi-player potential and lots of other goodies that the lucky winner will sample.

The "My Girlfr

In order to maintain our record of running competitions which display the most tenuous connections possible to the game in question, we have pounced on the fact that *Dark Colony* contains 'Roswell' style aliens. If the phrase 'Roswell incident' means nothing to you, then you've either never seen the X-Files, aren't interested in aliens, or you have lots of friends and lead an interesting life.

For Roswell, a town in New Mexico, is the most talked about place for a certain kind of person. Specifically, those who devote their lives to worrying whether the world's governments are denying us knowledge of aliens who they believe, 50 years ago, managed to fly millions of miles in a spaceship, before



166 MMX

By covering your girlfriend in curry sauce. Maybe.

iend is an Alien" Contest

realising they couldn't land properly and crashed.

So, when a film turned up last year claiming to be actual footage of a post mortem carried out on one of these alien crash victims, speculation of government conspiracies had every man and his dog theorising about whether it was genuine or not.

Take a look at the pictures though. Looks a bit rubbish doesn't it? Looks like he's made out of Plasticine. Anyway, we think you lot can do much better. So what we want you to do is this: recreate this famous post mortem with whatever materials you have to hand. We don't care what you do (just make sure it's legal because we don't like trouble here in happy PC GAMER land). Just make it look good. Matt's personal favourite involved asking his girlfriend to lie naked on a mortuary slab and covering her leg with a pound of lean minced beef and something which resembles alien blood – lemon curd, ketchup, guacamole, whatever. However, his left leg has developed a nervous twitch since so we wouldn't recommend that ourselves. You don't have to use a human subject – teddy bears, Action Men or mail order rubber 'pleasure' dolls are all candidates. Just remember: originality, style and body are the keywords we'll use when judging this one.

I've lovingly recreated the Roswell post mortem and think it looks just splendid. If you agree, send my Pentium to:

Name.....

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My most wanted

This bit is optional, but we'd like you to let us know the five forthcoming PC games you're most looking forward to, to aid us in compiling our Readers Most Wanted chart on page 34

1.....

2.....

3.....

4.....

5.....

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RULES

1. Employees of Future Publishing, Gametek, or the FBI shouldn't bother entering.

2. We will stubbornly deny all knowledge of any entries landing on our desks after 31 July.

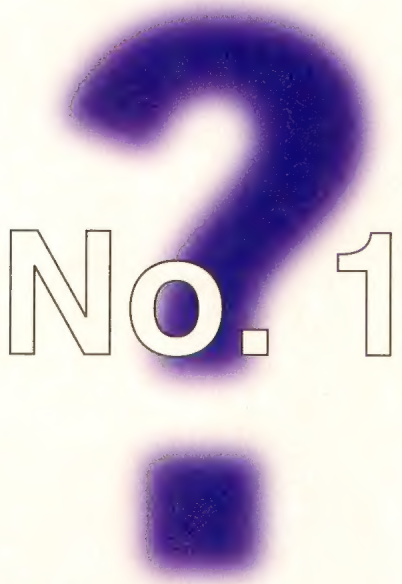
3. There was only one Roswell alien, so multiple entries will be zapped back into outer space.

4. Don't bother arguing with the Editor's decision. Especially when he's drunk.

NEXT MONTH

PC GAMER

Top 100



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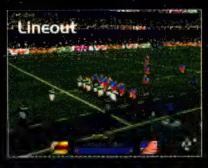

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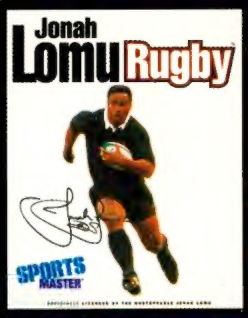

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